BEFORE THE

STATE CORPORATION COMMISSION

OF VIRGINIA

Application of	)	
	)	
Verizon Virginia Inc.	)	**Case No. PUC-2007-_____**
and	)	
Verizon South Inc.	)	
	)	
For a Determination that Retail Services Are	)	
Competitive and Deregulating and Detariffing	)	
of the Same	)	

WASHINGTON-ARLINGTON-ALEXANDRIA (WAA) EXHIBITS

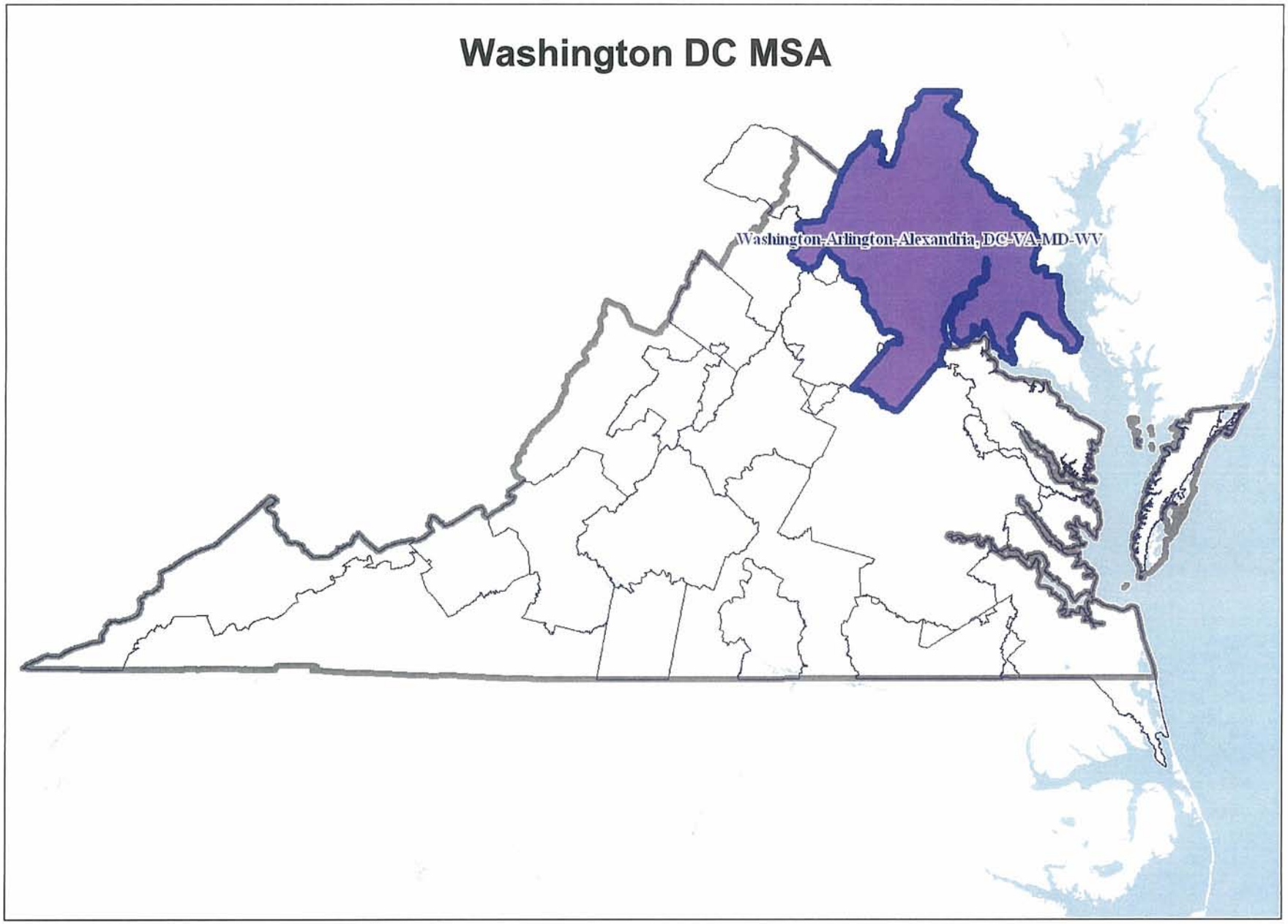
PUBLIC VERSION

Washington-Arlington-Alexandria (WAA) Exhibits

Table of Contents

1. Washington-Arlington-Alexandria MSA
2. Washington-Arlington-Alexandria Report
3. Wire Centers by Rate Group, Exchange, City and County
4. Demographic Characteristics by Wire Center
5. Competitive Platform Availability
6. Competitive Carrier Availability
7. Cable Availability
8. Cable Modem Availability
9. Cable Voice Availability
10. Wireless Tower Locations by Year Constructed
11. Wireless Coverage Area by Wireless Carrier
12. Wireless Coverage Area by Number of Carriers
13. Wireless Broadband Coverage
14. CLEC Aggregate Line Counts and Competitive Service Offerings
15. Cable and Traditional Wireline Competitive Summary
16. Resale and Wholesale Advantage Competition
17. Facilities Based Competition
18. Competitive Switch Reach
19. Regional Wireline Competitive Penetration

WAA-1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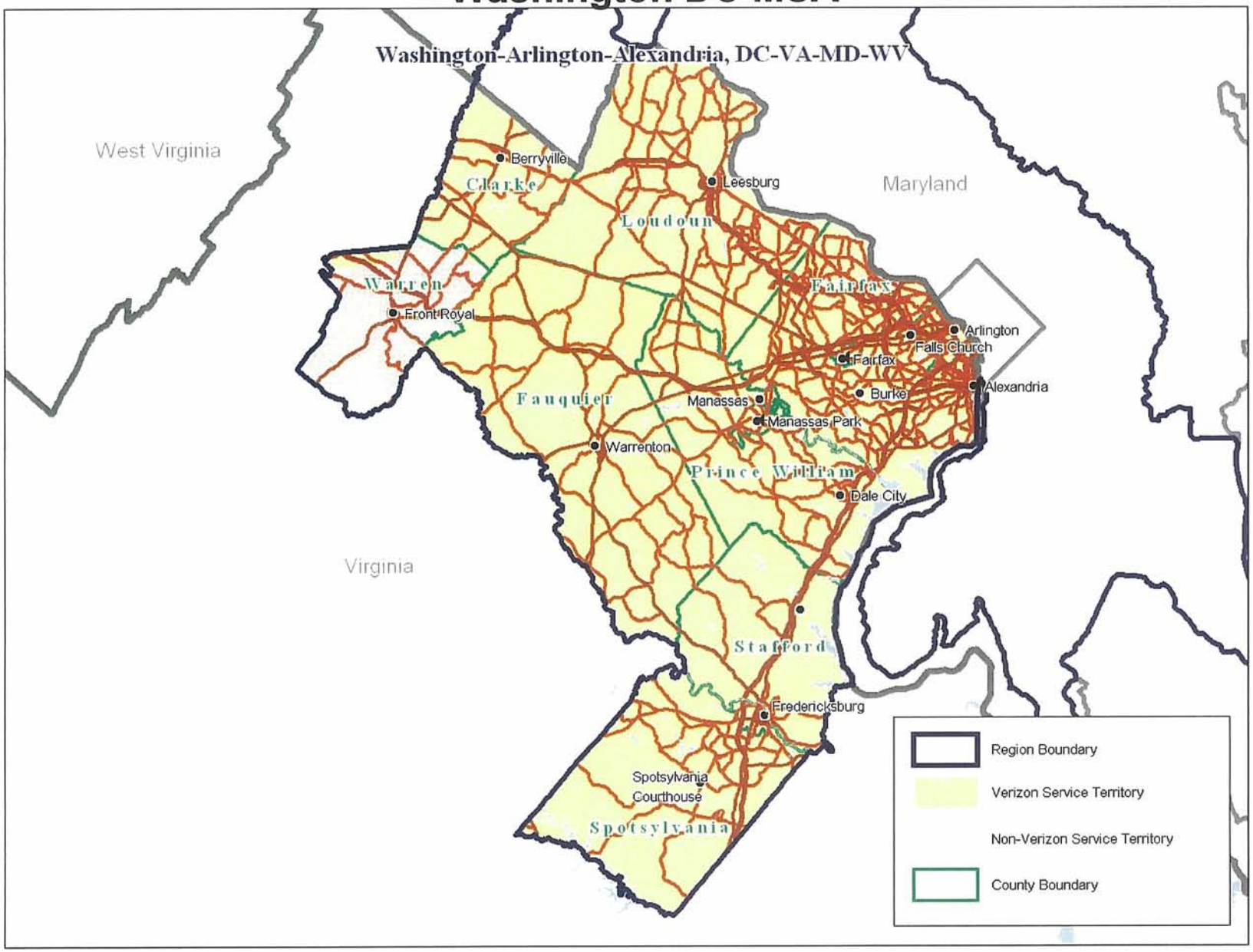
Washington DC MSA



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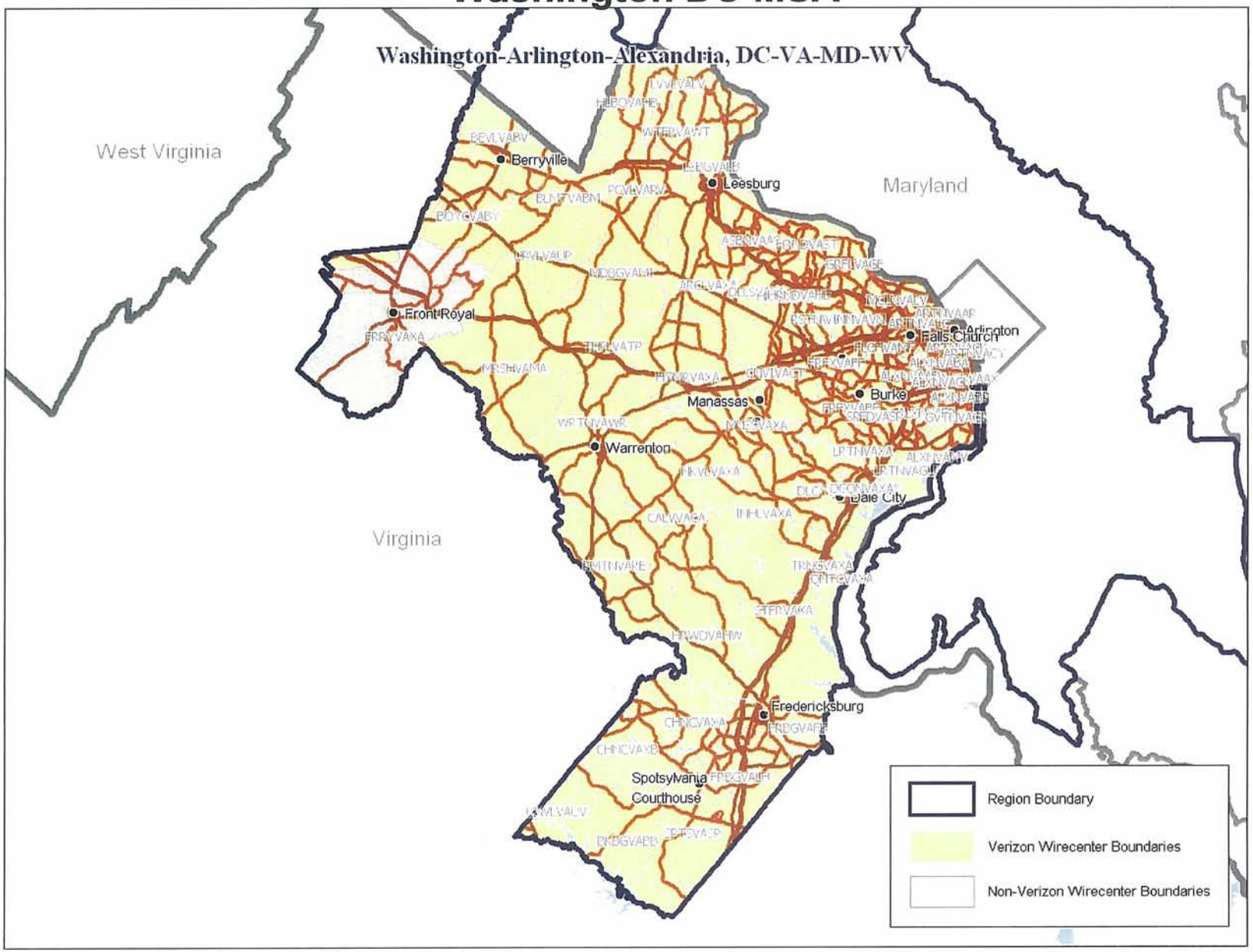

Exhibit WAA-1, page 3 of 3

WAA-2

Exhibit WAA-2

COMPETITION AND POTENTIAL COMPETITION FOR RETAIL TELECOMMUNICATIONS SERVICES IN VERIZON'S WASHINGTON-ARLINGTON-ALEXANDRIA MSA SERVICE TERRITORY

Report of Jeffrey A. Eisenach, Ph.D.
January 17, 2007

CONTENTS

I. Overview 1

II. Availability of Alternative Services 2

A. Traditional CLECs 3

B. Cable Telephony 4

C. Mobile Telephony 4

D. Broadband and VoIP 4

E. Overall Availability of Alternative Platforms and Competitors 8

III. Usage of Alternative Services 9

A. Traditional CLECs and Cable Telephony 9

B. Mobile Telephony 10

C. Broadband and VoIP 11

D. Overall Penetration of Wireline and Intermodal Competition 11

IV. Potential Competition and Entry 13

V. Conclusion 14

I. OVERVIEW

Verizon's service territory in the Washington-Arlington-Alexandria ("WAA") MSA consists of 2,834 square miles, with a population of 2,454,330 living in 890,156 households as of 2006; there are 102,362 business establishments.[1] The average population density is 866 residents per square mile, and the median household income is $87,480.[2] Verizon operates 61 wire centers in the region.[3]

The WAA MSA is located in the 571, 540, and 703 area codes. It is bordered on the north and east by Maryland and the District of Columbia, and is contiguous with the Winchester region to the west, and with the North, Northern Neck and Richmond regions to the south.[4]

The region includes densely populated counties such as Arlington (7,323 persons per square mile) and Fairfax (2,455 persons per square mile), but also includes lightly populated areas such as Clarke County (171 persons per square mile) and Fauquier County (85 persons per square mile).[5] Its 61 wire centers range in density from 11,979 residents per square mile (ALXNVABA, in Alexandria) to 38 residents per square mile (THPLVATP, in The Plains, Virginia).[6] In this sense, the area represents a microcosm of the entire state.

Competition for telecommunications services is intense throughout the WAA MSA. Virtually every type of competitor is represented in the area. Facilities-based wireline competition is extensive, both from traditional CLECs such as **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL] of all

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1. *See* Exhibit WAA-4.
2. *See id.*
3. *See* Exhibit WAA-3.
4. *See* Exhibit WAA-1.
5. Densities as of 2000. *See* United States Census Bureau, STATE AND COUNTY QUICKFACTS, http://quickfacts.census.gov/qfd/states/51/51059.html (last visited October 15, 2006).
6. *See* Exhibit WAA-4. WAA-4 does not contain the PNTGVADF wire center represented in WAA-3 and WAA-15. **[BEGIN CONFIDENTIAL]**

   [END CONFIDENTIAL] Exhibit WAA-4. *Cf.*Exhibit WAA-15.
7. **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL]

8. *See* Exhibit WAA-14.

wireline telephone lines are now served by carriers other than Verizon, and the percentage is growing rapidly.[9]

Mobile wireless coverage is ubiquitous, and mobile broadband services are available from Cingular and Sprint as well as from Verizon Wireless. About **[BEGIN CONFIDENTIAL] [END CONFIDENTIAL]** people in the region consider their cell phone to be their primary telephone.

With respect to broadband, nearly all customers have access to cable modem service, and a variety of other broadband options are available from CLECs as well as from fixed wireless providers, whose service territories cover 85 percent of residences. In Manassas, over 12,000 households have the option to get their broadband from a BPL system deployed over the city's municipal electricity grid.

There are no barriers to entry. Significant entry has already occurred and more is underway. For example, Cox and Comcast already provide cable telephony services to over 60 percent of the households in the WAA region. New broadband providers, including providers utilizing BPL, EVDO and fixed wireless, have recently begun providing next generation broadband services in the region, including in its more rural areas.

Verizon has rolled out its FiOS FTTP services throughout much of the region, at least partially in response to the intense competition it is facing from the triple play offerings from Cox and Comcast.[10]

The analysis below of the availability and usage of existing alternative services, and of the conditions associated with potential competition and new entry, demonstrates that competition already regulates the prices of Verizon's retail telephony services in the WAA MSA, and that further entry and even more intense competition is a virtual certainty.

II. AVAILABILITY OF ALTERNATIVE SERVICES

All 890,156 households in the WAA region and all 102,362 businesses in the WAA region have the option to obtain alternatives to Verizon's BLETS, OLETS and Bundled Services from competitive providers. Facilities-based competition is widespread, and includes both traditional CLECs and cable providers, but a large number of CLECs also provide services through resale and/or Wholesale Advantage agreements. Mobile telephone service is ubiquitous, and broadband service is nearly so.

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9. *See* Exhibit WAA-15.
10. *See* Verizon, Consumer Choice for Cable Service Leaps Forward in Washington Metropolitan Area (June 2, 2006), http://newscenter.verizon.com/press-releases/verizon/2006/page.jsp?itemID=29670050, last viewed January 5, 2006.

A. Traditional CLECs[11]

Traditional CLECs provide robust competition throughout the WAA MSA, and facilities-based competition is widespread.

[BEGIN CONFIDENTIAL]

[END CONFIDENTIAL] [14]

In addition, all households and businesses in the WAA MSA can receive service from traditional CLECs through resale and/or Wholesale Advantage services available from Verizon.[15] As of March 2006, **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL]

Altogether, a total of **[BEGIN CONFIDENTIAL]**

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11. Here and in the remaining sections of this report, unless otherwise indicated, "traditional CLEC" refers to CLECs other than cable companies. "CLEC" refers to both traditional CLECs and cable companies.
12. *See* Exhibit WAA-15 and WAA-17. The E911 data includes lines that are unable to be assigned to a wire center. These unassignable lines are included in the aggregate competition information. This leads to some under representation of E911 lines when broken out by CLEC and by wire center.
13. *See* Exhibit WAA-14.
14. *See* Exhibit WAA-4 and Exhibit WAA-15. It is also true that, based on the reach of CLEC switches located in and around the WAA region, all 890,156 households and 102,362 businesses can receive service from at least one traditional CLEC. Furthermore, 99.9 percent of the households can be served by three CLECs. *See* Exhibit WAA-18.
15. *See* Exhibit WAA-16.
16. *See* Exhibit WAA-15.
17. *See* Exhibit WAA-15. (Does not include the Pentagon wire center. *See* n. 6.).

[END CONFIDENTIAL] [18]

B. Cable Telephony

Comcast and Cox both offer cable telephony in the WAA region.[19] Comcast offers cable telephony to 193,518 households (69.2 percent of its service territory), while Cox offers cable telephony everywhere in its service territory.[20] Comcast's service territory includes 31.4 percent of the households, while Cox's service territory includes 41.0 percent of the households.[21] Thus, 62.8 percent of households currently have access to cable telephone.[22] Comcast, however, is moving rapidly to complete its cable telephony deployment. In addition, Adelphia, which recently was purchased by Comcast, has infrastructure capable of providing cable telephony service, and Comcast has announced plans to deploy cable telephony throughout the former Adelphia franchise areas in the immediate future.[23] Adelphia service territory includes 22.8 percent of the households in the WAA region.[24] Once these deployments are complete, 85.6 percent of all households in the region will have access to cable telephone service.

C. Mobile Telephony

Of the 890,156 households in the WAA region, virtually 100 percent (all but 573) have access to two or more CMRS providers.[25] In addition to Verizon Wireless, there are five CMRS providers offering retail telephone services in the WAA region.[26] They are Alltel, Cingular, NTelos, Sprint, and T-Mobile.

As of 2006, there are 235 cellular towers in the WAA region.[27] Of these, 28 have been constructed since 2004.[28] There is at least one cellular tower located in the area served by 50 of the 60 Verizon wire centers.[29]

D. Broadband and VoIP

Increasingly, consumers are choosing to combine stand-alone broadband Internet access with VoIP services provided by "bring your own access" companies such as Vonage, thus creating their own bundles of broadband and retail telephony services. Both broadband and VoIP services are available to the vast majority of WAA households and businesses.

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18. *See* WAA-14.
19. *See* Exhibit VA-10 and Exhibit WAA-9.
20. *See id.*
21. *See id.*
22. *See id.*
23. *See* West Testimony at 42. *See also* Comcast, FAQ, https://www.comcast.com/Customers/FAQ/FaqDetails.ashx?Id=3804 (last visited Dec. 3, 2006); *id.* at https://www.comcast.com/Customers/FAQ/FaqDetails.ashx?Id=3807 (last visited Dec. 3, 2006).
24. *See* Exhibit VA-10 and Exhibit WAA-9.
25. *See* Exhibit VA-4 and Exhibit WAA-12.
26. *See* Exhibit WAA-11.
27. *See* Exhibit WAA-10.
28. *See id.*
29. *Compare* Exhibit WAA-3 and Exhibit WAA-10.

Cable Modem and DSL Service: All three major cable companies in the region, Adelphia (now Comcast), Comcast and Cox offer cable modem service throughout their service territories in the WAA region,[30] serving 95.3 percent of all residences.[31] In addition, Verizon makes DSL service without voice available to retail customers for $26.99 per month, and FiOS service without voice is available for $39.95 per month. DSL service is available to **[BEGIN CONFIDENTIAL] [END CONFIDENTIAL]** of households.[32]

Broadband Over Powerline: In addition to wireline cable modem, DSL and FiOS service, 12,687 Manassas households have access to wireline broadband over powerline service ("BPL").[33] Manassas became the first U.S. locality to implement broadband over power line (BPL) technology on a city-wide basis in the fall of 2005.[34] Manassas offers the service via a franchise agreement with Communication Technologies Inc. (COMTek).[35] As of March 14, 2006, COMTek had about 600 BPL subscribers (with 1,000 expected by the end of 2006), who pay about $28.95 per month for the service.[36] Business service is available starting at prices of $39.95 per month.[37] The starting plans offer download speed of 3.5 Mbps and uploads of 1 Mbps.[38] Upgrades are available to 4.0 Mbps download speeds with the higher level package, which also includes extras such as extra Web space and e-mail accounts.[39] COMTek is targeting all 12,500 households in Manassas with the service.[40] This technology allows for direct "plug in" broadband access through electricity sockets, rather than over phone or cable TV lines.[41]

Fixed Wireless Service: In addition to wireline cable modem, DSL and FiOS service, 85 percent of households have access to fixed wireless broadband services.[42] Service is provided by government entities (e.g., Alexandria) as well as by at least a dozen commercial providers. Providers include:

- City of Alexandria: "Wireless Alexandria" is a pilot project by the city to provide free wireless Internet access to the public in specific outdoor areas. It is believed to

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30. *See* Exhibit VA-10 and Exhibit WAA-8.
31. *See id.* Metrocast also provides cable modem throughout its service territory covering 267 households.
32. *See* Exhibit VA-4.
33. *See id.*
34. *See* Comtek, Major U.S. Technology Milestone (October 2005), http://www.comtekbroadband.com/_news/100505.htm (last visited January 5, 2007); City of Manassas, Broadband over Powerline (BPL), http://www.manassascity.org/index.asp?NID=118 (last visited Nov. 21, 2006).
35. *See id.*
36. Michael Martinez, *Manassas, Va. Slowly Deploys First Municipal Power-Line Plan* NATIONAL JOURNAL TELECOM UPDATE, Aug. 23, 2006, *available at* http://www.njtelecomupdate.com/lenya/telco/live/tb-OTYF1125056852219.html.
37. COMTek, Broadband Business Service, http://comtekbroadband.com/_products/business.htm (last visited May 30, 2006).
38. COMTek, Compare Services, http://comtekbroadband.com/_products/compare_services.htm (last visited June 13, 2006).
39. *See id.*
40. Press Release, COMTek, Major U.S. Technology Milestone: COMTek, City of Manassas Delivers First City-Wide Availability of Broadband over Powerline (BPL) in the U.S (Oct. 5, 2005), *available at* http://www.comtekbroadband.com/_news/100505.htm.
41. *See id.*
42. *See* Exhibit VA-4.

be the first wide area, free Internet zone in the DC region, and the largest in Virginia, and covers the heavily populated King Street Corridor, from Washington Street to the Marina.[43] Based on the success of the system, the city has now initiated a formal bidding process under which it intends to award a franchise for a citywide wireless network covering all public spaces in the city.[44] While the system is optimized for outdoor use, and is not intended to compete with commercially available Internet services, it will in fact be accessible indoors for many residents.

- City of Fairfax: In March 2006, the city of Fairfax issued a request for proposal (RFP) for the creation of a city-wide wireless broadband network.[45] Fairfax City Councilman Scott Silverthorne said that he expects a basic wireless Internet service to be made available either for free or at a lower rate than that charged by commercial Internet Service Providers (ISPs).[46] The service may be subsidized by advertising.[47] Fairfax may accept multiple proposals, which may use either WiFi or WiMax technologies.[48] As of May 2006, Fairfax had received ten bidders to provide wireless broadband services.[49]

- Aerial Internet: Aerial Internet services the Washington-Arlington-Alexandria MSA, specifically Falls Church and the surrounding areas.[50] The company caters to business consumers in the downtown district, offering wDSL (wireless DSL) ranging from 384Kbps for $79 per month, 512Kbps for $129 per month, 784Kbps for $199 per month, and 1 Mbps for $249 per month. "wT-1" (wireless T-1) offers speeds of 1.5 Mbps to 3 Mbps and "wFiber" (wireless Fiber) offers carrier grade services up to 60 Mbps.[51]

- Bull Run Mountain Wireless: Bull Run Mountain offers fixed wireless broadband solutions to residential and business consumers in the Washington-Arlington-Alexandria MSA.[52] Service plans for residential are 512 Kpbs for $34.95 per month or 1.5 Mbps for $49.95 per month. Business solutions range up to 1.5 Mbps for $149.95 per month. Dedicated T-1 lines are also available for business consumers.[53]

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43. Wireless Alexandria, What is Wireless Alexandria?, http://www.wirelessalexandria.com/# (last visited Nov. 21, 2006).
44. Press Release, City of Alexandria, City Council Considers Bids to Create Citywide Wireless Network (May 9, 2006), *available at* http://www.wirelessalexandria.com/alexwireless_bid.html (last visited Nov. 21, 2006).
45. Frank Mustac, *City Proposes Wireless Option*, TIMESCOMMUNITY.COM, March 16, 2006, *available at* http://www.zwire.com/site/printerFriendly.cfm?brd=2553&dept_ id=576934&newsid=16316559.
46. *See id.*
47. *See id.*
48. *See id.*
49. Press Release, City of Fairfax, RFP Bidders List (May 22, 2006), *available at* http://www.fairfaxva.gov/IT/RFPBiddersList.pdf.
50. Aerial Internet, http://www.aerialInternet.com/index.php?page=availability (last visited July 20, 2006).
51. *See id* .at http://www.aerialInternet.com/index.php?page=services (last visited July 20, 2006).
52. Bull Run Mountain Wireless, http://broadband.bullrunmountain.org (last visited July 21, 2006).
53. *See id.*

- East Stratford Wireless: East Stratford Wireless offers fixed wireless broadband services in Leesburg.[54] Prices range from 300 Kbps download speeds and 64 Kbps upload speeds for $29.95 per month up to 1 Mbps download and 192 Kbps upload speeds for $49.95 per month.[55]

- Free Flow Wireless: Free Flow offers fixed wireless broadband solutions in Northern Virginia. The company focuses on business solutions, with speeds up to 11 Mbps. Prices are available upon request.[56] Free Flow also offers VoIP service, and is planning to expand its offerings to include residential VoIP service.[57]

- Loudoun Wireless: Loudoun Wireless offers fixed wireless service in northern Loudoun County with prices beginning at $59.95/month for 512-768 Kbps of bandwidth.[58]

- RapidDSL & Wireless: RapidDSL & Wireless offers fixed wireless broadband solutions to both residential and business customers in Northern Virginia. Residential plans include "basic" with 1 Mbps for $30 per month and "deluxe" with 3 Mbps for $40 per month. Business services range from $99 per month for 1 Mbps service to $749 per month for 5 Mbps service. Carrier grade service is available on a quote basis with speeds up to 30 Mbps.[59]

- Roadstar Internet: Roadstar provides wireless broadband services in Loudon County. Service plans are tailored for both residential customers (1.0 Mbps starting at $59/month)[60] and enterprise services (starting at $199 per month).[61] Roadstar specifically advertises both its residential and enterprise services as supporting VoIP applications.

- SpectrumAccess: SpectrumAccess provides fixed wireless broadband solutions to residential and business customers in the WAA region. Residential service ranges from $59 per month for 768 Kbps to $99 per month for 1.5 Mbps speeds. Business services range from $150 per month for 512 Kbps to $5,625 per month for 45 Mbps Enterprise class services.[62]

- Waterford WISP: Waterford WISP is a non-profit provider of fixed wireless service located in Waterford, Virginia, near Leesburg. It is operated by the Waterford

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54. East Stratford Wireless, www.eswis.net (last visited Nov. 21, 2006).
55. East Stratford Wireless, Wireless Broadband Packages, http://www.eswis.net/Pricing.htm (last visited Nov. 21, 2006).
56. *See* Free Flow Wireless, http://www.freeflow.net (last visited Nov. 21, 2006).
57. *See id.* at http://www.freeflow.net/voip-faq.php# (last visited Nov. 21, 2006).
58. Loudon Wireless, http://www.loudounwireless.com/ (last viewed Nov. 16, 2006).
59. *See* RapidDSL, http://www.rapiddsl.net/ (Last visited Nov. 21, 2006).
60. *See* Roadstar Internet, Residential Services, http://www.roadstarinternet.com/pdfs/Family_services.pdf (last visited Nov. 16, 2006).
61. *See* Roadstar Internet, Business Services, http://www.roadstarinternet.com/pdfs/Enterprise_services.pdf (last visited Nov. 16, 2006).
62. *See* SpectrumAccess, www.spectrumaccess.com (last visited Nov. 21, 2006).

Foundation, and offers broadband services to both residential and enterprise customers for $59 per month.[63]

- Wave2Net: Wave2Net, based in Winchester, offers wireless fixed broadband solutions over a service territory that includes the westernmost portion of the WAA region, including Berryville in Clarke County.[64] Pricing ranges from $36.95 per month for WiFi Beginner class service, with symmetrical speeds of 256 Kbps to $149.95 per month for WiFi Expert class service, with symmetrical speeds of 1 Mbps.[65]

- WhisperWave: WhisperWave offers fixed wireless broadband services to residential and business customers in Manassas. Residential service is $30 per month for 1.5 Mbps symmetrical service. Business service is $40 per month for 1.5 Mbps symmetrical service.[66]

- XO Communications: Partnering with subsidiary Nextlink, which owns LMDS spectrum in 75 cities, XO Communications has begun offering fixed wireless broadband, including in the Washington, DC Metropolitan Area, with bandwidth up to 100 Mbps. The service is aimed primarily at enterprise customers, and supports a "wide range of networking services including Internet access, voice over IP (VoIP), and private business local area networks at native LAN speeds."[67]

While some of the firms discussed above offer bundles that include VoIP services, customers also have the option of purchasing alternatives to Verizon's BLETS, OLETS, and Bundled Services from by-pass VoIP companies. VoIP providers that offer telephone numbers in the 703, 571 and 540 area codes include at&t, Lingo, Net2Phone, SunRocket, and Vonage.[68]

E. Overall Availability of Alternative Platforms and Competitors

Looking overall at the availability of service from alternative platform providers (i.e., from mobile wireless, cable modem, DSL, facilities-based CLECs, fixed wireless and BPL), 100 percent of all households in the WAA MSA have service available from at least one alternative platform provider and 91 percent have service from four or more alternative platforms.[69]

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63. *See* Waterford WISP, http://www.waterfordwisp.com/ (last visited November 16, 2006); Waterford WISP, http://www.waterfordwisp.com/ww_ourservices.htm (last visited November 16, 2006).
64. *See* Wave2Net, Coverage Map, http://www.wave2net.com/public/coverage.html (last visited Nov. 21, 2006).
65. Wave2Net, Services, http://www.wave2net.com/public/price.html (last visited Nov. 21, 2006).
66. *See* WhisperWave, http://www.whisperwave.net/index.jsp (last visited Nov. 21, 2006).
67. Press Release, XO Communications, XO Communications Deploys Fixed Broadband Wireless in Nine Cities to Expand Metro Coverage and Reduce Network Access Costs (Aug. 28, 2006), *available at* http://www.xo.com/news/316.html. *See also* Jeff Baumgartner, *XO Gets a Fix on Wireless Broadband,* CED MAGAZINE, Aug. 28, 2006, *available at* http://www.cedmagazine.com/article/CA6366384.html?text=xo.
68. *See* West Testimony at 81.
69. *See* Exhibit VA-4 and Exhibit WAA-5.

Similarly, looking overall at the availability of service from all competitors – i.e, the same measure as above, but counting each competitor separately (e.g., counting each CMRS provider separately), competition is even more extensive: 100 percent of households have competitive alternatives from at least two competitors, and 69 percent have access to service from eight or more Verizon competitors.[70]

III. USAGE OF ALTERNATIVE SERVICES

Verizon's internal data shows that at least **[BEGIN CONFIDENTIAL] [END CONFIDENTIAL]** of wireline telephone lines in the WAA region were being served by competitors as of March 2006, and past trends would indicate that that proportion would have increased in the intervening months. However, these figures understate the true market share of competitors, since they fail to account for intermodal competition, such as from wireless and broadband.

Survey data indicates that **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL] of households subscribe to broadband. Taking intermodal competition into account, the data presented below show that Verizon voice lines now account for only 29.7 percent of all wireline telephony, wireless telephony and broadband connections in the region.

Time series data presented at the end of this section also shows that Verizon's wireline market share is falling, both in proportion to the number of wirelines served and relative to the number of households in the region. Taken together, the data presented in detail below demonstrates that the competitive alternatives described in Section II represent viable alternatives for Verizon's BLETS, OLETS and Bundled Services in the WAA region, since customers are actually switching to them in large numbers.

A. Traditional CLECs and Cable Telephony

As detailed in Exhibit WAA-15, a total of **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL]

These figures are consistent with the survey data presented by Mr. Newman, which shows that **[BEGIN CONFIDENTIAL] [END CONFIDENTIAL]** of residential

70. *See* Exhibit VA-5 and Exhibit WAA-6.
71. This figure does not include approximately six percent of the population (who by definition were not reached through Verizon's telephone survey) who have cut the cord altogether. *See* West Testimony at 63.
72. *See* Exhibit WAA-15.
73. *See* Exhibit WAA-19.

customers in the WAA region are using providers other than Verizon.[74] In large MSAs (including the WAA region), the survey data shows that 27 percent of POTS business customers and 37.6 percent of all business customers are using other providers.[75]

Exhibit WAA-15 also demonstrates that wireline competition is ubiquitous throughout the WAA MSA. It shows that competitors are actually serving **[BEGIN CONFIDENTIAL] [END CONFIDENTIAL]** of the relevant 61[76] wire centers in the WAA region, including the smallest and most rural wire centers. Furthermore, facilities-based competition is also widespread. Cable companies, which use none of Verizon's infrastructure and traditional CLECs using only Verizon's last mile facilities are serving customers in **[BEGIN CONFIDENTIAL] [END CONFIDENTIAL]** of the 61 wire centers. These data demonstrate that alternatives to Verizon's BLETS, OLETS, and Bundled Services from wireline competitors are available and in widespread use by both residential and enterprise customers throughout the WAA region.

B. Mobile Telephony

The survey data presented by Mr. Newman shows that **[BEGIN CONFIDENTIAL] [END CONFIDENTIAL]** of households in the WAA MSA purchase telephone service from mobile telephone companies.[77] **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL] [78]

While Mr. Newman's testimony does not provide data on business usage of mobile telephones specifically for the WAA MSA, it does indicate that the proportion of businesses in large MSAs (including the WAA MSA) which purchase mobile telephone service is 57.9 percent,[79] and that 17.7 percent of business respondents consider their mobile telephone to be their primary means of voice communication.[80]

These figures do not include mobile telephone customers who have dropped their wireline service altogether, as these customers were not eligible for the telephone survey. As Mr. West's testimony indicates, national estimates suggest that approximately six percent of residential customers have "cut the cord."[81]

Again, these figures demonstrate that the mobile wireless alternatives available to consumers in the WAA MSA function as actual, viable alternatives for Verizon's BLETS, OLETS and bundled services.

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74. *See* Exhibit VA-21.
75. *See* Exhibit VA-20.
76. *See* Exhibit WAA-15.
77. *See* Exhibit VA-21.
78. *See id.*
79. *See* Exhibit VA-20.
80. *See id.*
81. *See* West Testimony at 64.

C. Broadband and VoIP

The survey data presented by Mr. Newman show that **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL] [82]

One implication of the data is that the cable companies in the WAA region have been highly successful in selling at least the second (data) leg of their triple play offerings, and that Verizon thus faces a substantial competitive challenge as it tries to retain customers in the face of cable's triple play cable telephony offerings.

The survey data presented by Mr. Newman show that in large MSAs in Virginia (including the WAA region), 73.5 percent of businesses subscribe to high-speed broadband service.[83]

These overall usage rates for broadband demonstrate that the broadband plus VoIP "build your own bundle" option is available today to the vast majority of both residences and businesses in the WAA MSA.

D. Overall Penetration of Wireline and Intermodal Competition

While it is not possible to estimate precisely the number of lines Verizon has lost to wireline and intermodal competitors, it is clear that competition is having a significant impact on Verizon's market share, both in terms of wireline telephony and the overall markets for its retail services, and that wireline competitors are winning a growing proportion of customers. The data also indicate that intermodal competitors are winning a growing proportion of customers from wireline carriers of all types (i.e., including both Verizon and the traditional CLECs and cable telephony providers).

Both Verizon's line count and its wireline market share in the WAA MSA continue to decline. As indicated in Figure 1 below, between December 2003 and March 2006 (i.e., in 27 months), the ratio of Verizon lines to households fell from **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL] [85]

During this same 27-month period, the number of residential wirelines served by wireline CLECs rose by **[BEGIN CONFIDENTIAL]**

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82. *See* Exhibit VA-21.
83. *See* Exhibit VA-20.
84. *See* Exhibit WAA-4 and Exhibit WAA-19.
85. *See* Exhibit WAA-19.
86. *See id.*

[END CONFIDENTIAL] [89]

Figure 1 also demonstrates the significance of intermodal competition from wireless telephony and from broadband plus VoIP "build your own" bundles. It shows that the ratio of combined Verizon and CLEC residential lines to households fell from **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL] [90] Assuming people have not stopped using voice telephony altogether, these data clearly indicate that wireless and broadband providers are competing effectively with both Verizon and other traditional wireline providers – a conclusion which is consistent with the high rates of wireless telephony usage and broadband adoption discussed above.

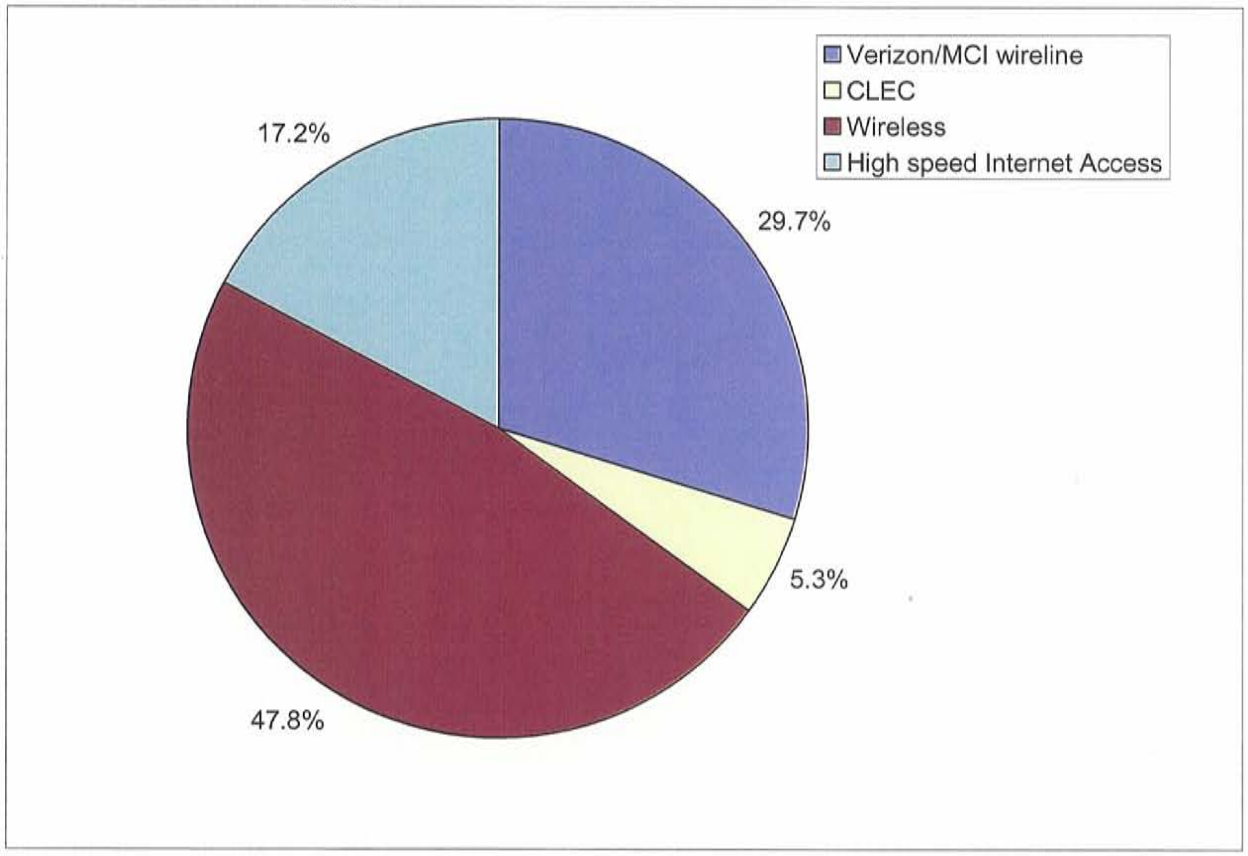
[BEGIN CONFIDENTIAL]

[END CONFIDENTIAL]

87. *See id.*
88. *See id.*
89. *See id.*
90. *See id.*

Another perspective on Verizon's loss of overall share is shown in Figure 2 below, which shows the percentage of total connections – including wireline telephony, wireless telephony and broadband connections – served by Verizon, based on the survey conducted by Mr. Newman. As the figure shows, Verizon voice lines now account for only 29.7 percent of all wireline telephony, wireless telephony and broadband connections.[91]

Figure 2: Verizon Share of Total Connections



IV. POTENTIAL COMPETITION AND ENTRY

While it is clear from the evidence presented above that actual competition already in the marketplace is extensive, even in the absence of additional entry, it is equally clear that entry has occurred, is occurring and is likely to continue occurring in the future. Competition in the WAA MSA is thus certain to become even more intense in the coming months and years.

First, while Cox has cable telephony available throughout its service territory in the WAA region, covering 41.0 percent of all households,[92] Comcast has not yet completed the rollout of cable telephony in its franchise areas, and has not yet started that rollout in the franchise areas formerly served by Adelphia. These continuing rollouts of cable telephony represent new entry, and, based on Dr. Taylor's analysis of cable telephony uptake, virtually guarantee a continuing decline in Verizon's wireline market share. When the rollouts are

91. *See* Exhibit VA-22.
92. *See* Exhibit WAA-10.

complete, in 2007, over 85 percent of all households in the WAA region will have access to cable telephony.[93]

Second, Cavalier, **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL] has announced plans to begin deploying its fiber-based triple play solution in the region "in the coming months."[94] Cavalier's triple-play product places the company in direct head-to-head competition with Verizon and the cable companies. As Cavalier Vice President of Product Management and Marketing, Andy Lobred, put it, "the real winner [from Cavalier's entry] will be consumers who will have price and product choices not previously available."[95]

Other facilities-based CLECs are also well-positioned to expand their offerings. **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL] Its newly deployed wireless broadband solution is only now entering the market, and its competitive significance is thus only beginning to be felt. Looking only slightly further into the future, and granting that Sprint has not yet announced which areas will be covered by its $3 billion WiMax network, it is difficult to imagine that the WAA region would not be among those where service is offered.[96]

More broadly, barriers to entry in the WAA MSA are extremely low. The WAA MSA has extensive access to high-capacity fiber optic, both long haul and metro fiber, with multiple long-haul POPs. Backhaul and transport capacity is thus widely available at competitive rates from multiple providers, including companies such as Cavalier and Continental Visi.net and XO.[97] The widespread presence of cell towers throughout the region (there are towers in 50 of the 60 wire center areas, and 28 new towers have been constructed since 2004) means that the mobile and fixed wireless entry is also inexpensive. Finally, while nearly all of the population in the WAA region lives in urban areas, a significant portion of the land area is rural, and thus potentially eligible for funding from the RUS.

V. CONCLUSION

Competition for retail telephone services in the WAA MSA is intense and certain to become more intense in coming years. By every measure, Verizon is already losing customers to traditional CLECs, cable telephony providers and intermodal competitors at a rapid pace, and this decline is taking place *at current prices.* Competitors of every stripe are entering the region. If Verizon were to raise prices, it would both accelerate the rate at which it is losing customers to existing competitive services, and increase the rate at which competitors and potential

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93. *See id.*
94. Press Release, Cavalier, Richmond-bases Communications Company expands into Williamsburg with its Digital TV Service (Oct. 17, 2006), *available at* http://www.cavtel.com/company/press/2006_10_17.shtml.
95. *See id.*
96. *See* West Testimony at 99.
97. *See* Exhibit VA-18.

competitors deploy new services in the region.[98] The current state of competition is already adequate to regulate the price of Verizon's retail telephone services in this region, and continuing entry is certain to further erode its competitive position.

98. An analysis conducted by Mr. Taylor, based on the alternatives currently in the market today, estimates that a decision by Verizon to raise prices by 5 percent in the WAA MSA would result in a *net* revenue loss of **[BEGIN CONFIDENTIAL]** **[END CONFIDENTIAL]** annually. *See* Taylor Testimony, Table 14 at 94.

WAA-3

Wire Centers by Rate Group, Exchange, City and County

REGION	LOC ST	WIRECENTER	LOCATION NAME	Rate Group	Exchange	CENTRAL OFFICE CITY	COUNTY
WASHINGTON-ARLINGTON-ALEXANDRIA, DC-VA-MD-WV	VA-E	ALXNVAAD	ANNANDALE VA	08	ALEX-ARL/FALLS CH-MCLEAN	ALEXANDRIA	Fairfax
		ALXNVAAX	ALEXANDRIA VA	08	ALEX-ARLINGTON	ALEXANDRIA	Alexandria City
		ALXNVABA	BARCROFT VA	08	ALEX-ARLINGTON	ARLINGTON	Alexandria City
		ALXNVABR	BURGUNDY ROAD VA	08	ALEX-ARLINGTON	ALEXANDRIA	Fairfax
		ALXNVACN	CAMERON VA	08	ALEX-ARLINGTON	ALEXANDRIA	Alexandria City
		ALXNVAFR	FRANCONIA VA	08	ALEX-ARLINGTON	ALEXANDRIA	Fairfax
		ALXNVAMV	MOUNT VERNON VA	08	ALEX-ARL/ENGLESIDE	ALEXANDRIA	Fairfax
		ARTNVAAR	ARLINGTON VA	08	ALEX-ARL/FAIRFAX-VN/HERN	ARLINGTON	Arlington
		ARTNVACK	COLUMBIA PIKE VA	08	ALEX-ARLINGTON	ARLINGTON	Arlington
		ARTNVACY	CRYSTAL CITY VA	08	ALEX-ARLINGTON	ARLINGTON	Arlington
		ARTNVAFC	FALLS CHURCH VA	08	FALLS CHURCH	ARLINGTON	Arlington
		ASBNVAAS	ASHBURN VA	08B	LEESBURG	ASHBURN	Loudoun
		BEVLVABV	BERRYVILLE VA	06	BERRYVILLE	BERRYVILLE	Clarke
		BKBGVABB	BROKENBURG VA	06	BROKENBURG	BROKENBURG	Spotsylvania
		BLMTVABM	BLUEMONT VA	06	BLUEMONT	BLUEMONT	Loudoun
		BOYCVABY	BOYCE VA	06	BOYCE	BOYCE	Clarke
		CALVVACA	CALVERTON VA	05	CALVERTON	CALVERTON	Fauquier
		CNVIVACT	CENTREVILLE VA	08	BRADDOCK/FF-VN/FC-HERN	FAIRFAX	Fairfax
		FLCHVAMF	MERRIFIELD VA	08	FF-VIENNA/FC-MCLEAN	FALLS CHURCH	Fairfax
		FRBGVAFB	FREDERICKSBURG VA	06	FREDERICKSBURG	FREDERICKSBURG	Fredericksburg City
		FRBGVALH	LEEHILL VA	06	FREDERICKSBURG	FREDERICKSBURG	Spotsylvania
		FRFXVABF	BRADDOCK ROAD VA	08	BRADDOCK/FF-VN/FC-MCLN	BURKE	Fairfax
		FRFXVAFF	FAIRFAX VA	08	FF-VN/BRADDOCK/HERNDON	FAIRFAX	Fairfax City
		GRFLVAGF	GREAT FALLS VA	08	FAIRFAX-VIENNA	GREAT FALLS	Fairfax
		GVTNVAGR	GROVETON VA	08	ALEX-ARLINGTON	ALEXANDRIA	Fairfax
		HLBOVAHB	HILLSBORO VA	08B	CATOCTIN	HILLSBORO	Loudoun
		HRNDVADU	DULLES CORNER VA	08	FAIRFAX-VIENNA/HERNDON	HERNDON	Fairfax
		HRNDVAHE	HERNDON VA	08	HERNDON/FAIRFAX-VIENNA	HERNDON	Fairfax
		HRNDVAST	STERLING PARK VA	08	HERNDON/FF-VN/HERNDON	STERLING	Loudoun
		HRWDVAHW	HARTWOOD VA	07	HARTWOOD	HARTWOOD	Stafford
		LRTNVAGU	GUNSTON VA	08	ALEX-ARL/ENGLESIDE	LORTON	Fairfax
		LSBGVALB	LEESBURG VA	08B	LEESBURG	LEESBURG	Loudoun
		LVVLVALV	LOVETTSVILLE VA	08B	CATOCTIN	LOVETTSVILLE	Loudoun
		MCLNVALV	LEWINSVILLE VA	08	FALLS CHURCH/MCLEAN	MCLEAN	Fairfax
		MDBGVAMI	MIDDLEBURG VA	06	MIDDLEBURG	MIDDLEBURG	Loudoun
		MRSHVAMA	MARSHALL VA	06	MARSHALL	MARSHALL	Fauquier
		PCVLVAPV	PURCELLVILLE VA	06	MT. GILEAD	PURCELLVILLE	Loudoun
		PNTGVADF	DEFENSE VA	08	ALEX-ARLINGTON	ARLINGTON	Arlington
		RMTNVARE	REMINGTON VA	06	REMINGTON	REMINGTON	Fauquier
		RSTNVAFM	FOX MILL ROAD VA	08	FAIRFAX-VIENNA/HERNDON	HERNDON	Fairfax
		SPFDVASP	SPRINGFIELD VA	08	ENGLESIDE/FC-MCLEAN	SPRINGFIELD	Fairfax
		SPTSVASP	SPOTSYLVANIA VA	06	SPOTSYLVANIA	SPOTSYLVANIA	Spotsylvania

Wire Centers by Rate Group, Exchange, City and County

REGION	LOC ST	WIRECENTER	LOCATION NAME	Rate Group	Exchange	CENTRAL OFFICE CITY	COUNTY
WASHINGTON-ARLINGTON-ALEXANDRIA, DC-VA-MD-WV	VA-E	THPLVATP	THE PLAINS VA	04	THE PLAINS	THE PLAINS	Fauquier
		UPVLVAUP	UPPERVILLE VA	06	UPPERVILLE	UPPERVILLE	Fauquier
		VINNVAVN	VIENNA VA	08	FAIRFAX-VIENNA	VIENNA	Fairfax
		WRTNVAWR	WARRENTON VA	06	WARRENTON	WARRENTON	Fauquier
		WTFRVAWT	WATERFORD VA	08B	CATOCTIN	WATERFORD	Loudoun
	VA-S	ARCLVAXA	ARCOLA	10	ARCOLA	ARCOLA	Loudoun
		CHNCVAXA	CHANCELLOR 1	09	CHANCELLOR	CHANCELLOR	Spotsylvania
		CHNCVAXB	CHANCELLOR 2	09	CHANCELLOR	CHANCELLOR	Spotsylvania
		DLCYVAXA	DALE CITY	10	DALE CITY	DALE CITY	Prince William
		DLLSVAXA	DULLES	10	DULLES	DULLES	Loudoun
		HYMRVAXA	HAYMARKET	10	HAYMARKET	HAYMARKET	Prince William
		INHLVAXA	INDEPENDENT HILL	10	INDEPENDENT HILL	INDEPENDENT HILL	Prince William
		LRTNVAXA	LORTON	10	LORTON	LORTON	Fairfax
		MNSSVAXA	MANASSAS	10	MANASSAS	MANASSAS	Manassas City
		NKVLVAXA	NOKESVILLE	10	NOKESVILLE	NOKESVILLE	Prince William
		OCQNVAXA	OCCOQUAN	10	OCCOQUAN	OCCOQUAN	Prince William
		QNTCVAXA	QUANTICO	10	TRIANGLE	QUANTICO	Prince William
		STFRVAXA	STAFFORD	10	STAFFORD	STAFFORD	Stafford
		TRNGVAXA	TRIANGLE	10	TRIANGLE	TRIANGLE	Prince William

WAA-4

CONFIDENTIAL

EXHIBIT WAA-4

CONFIDENTIAL
EXHIBIT

WAA-5

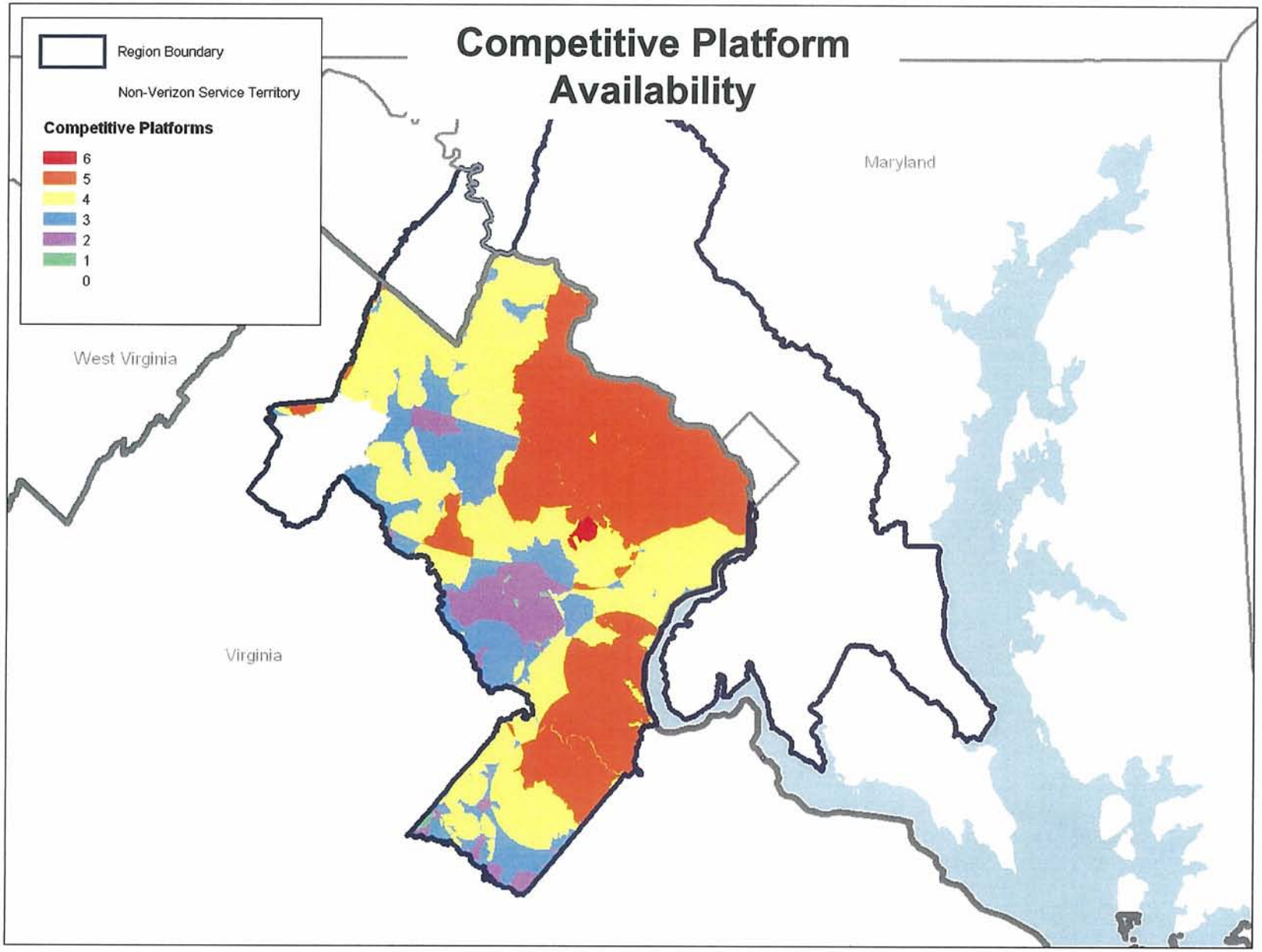
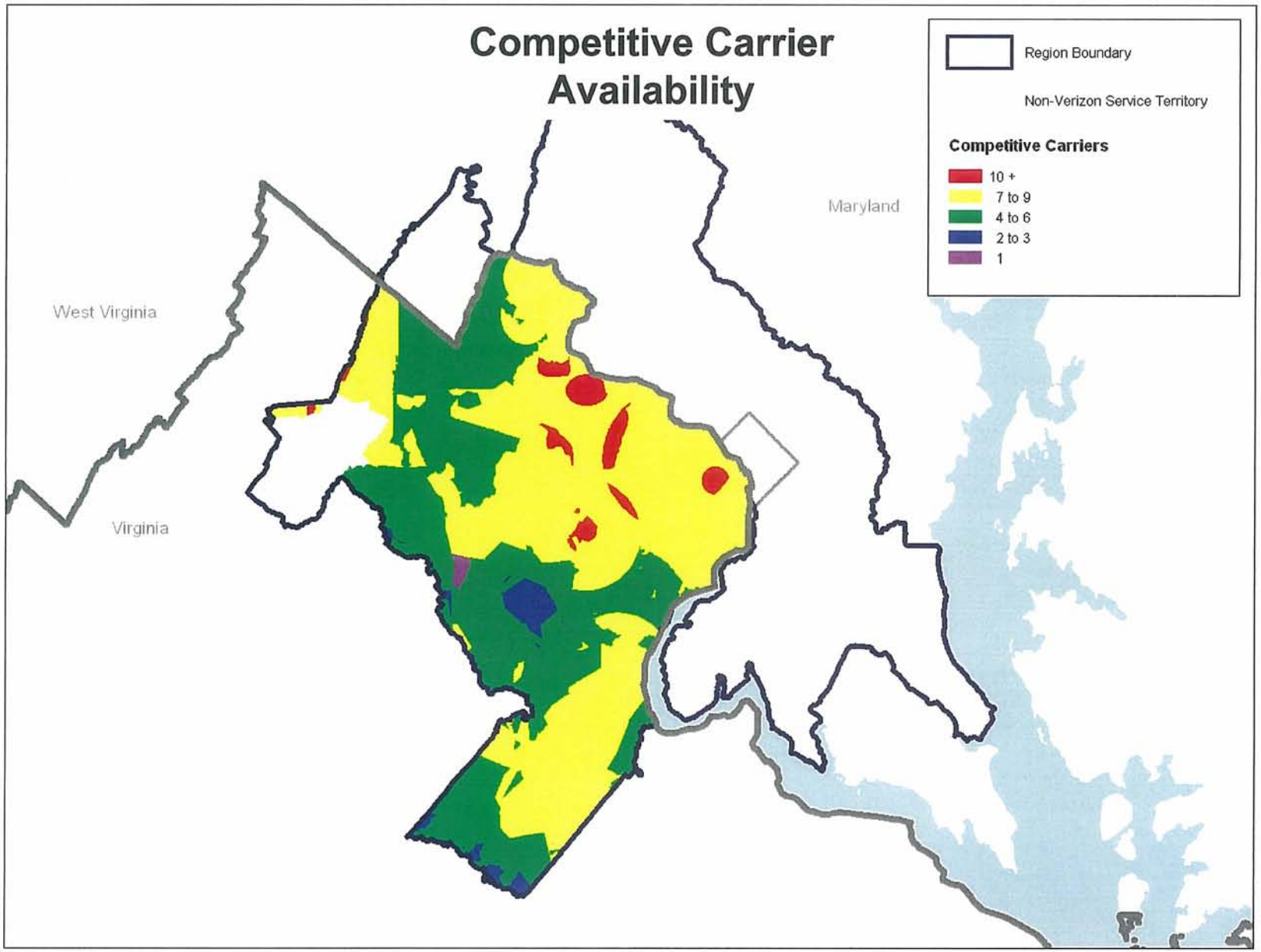


Exhibit WAA-5

WAA-6



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WAA-7

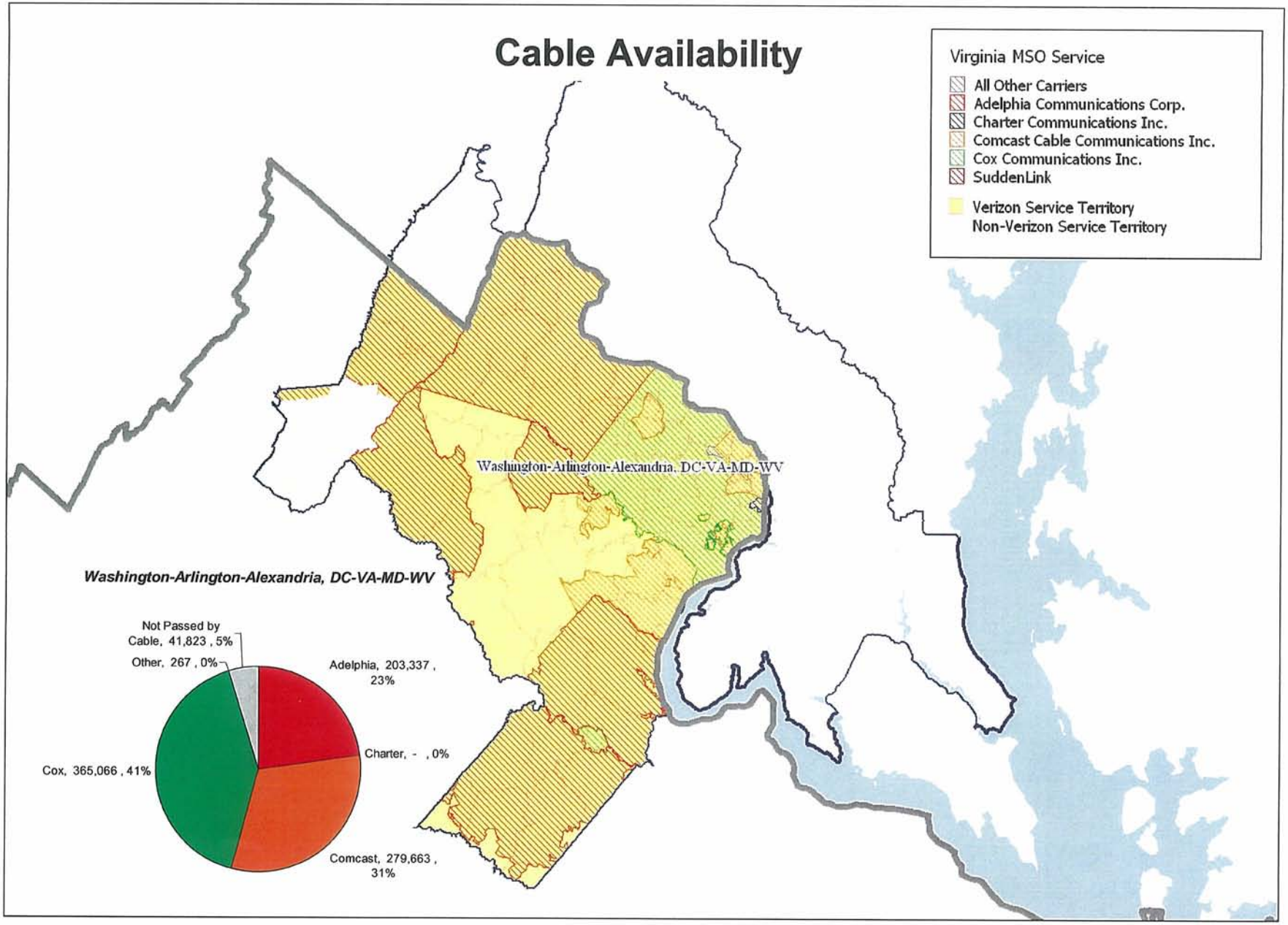


Exhibit WAA-7

Note: HH numbers reflect only those households in Verizon's Service Territory

WAA-8

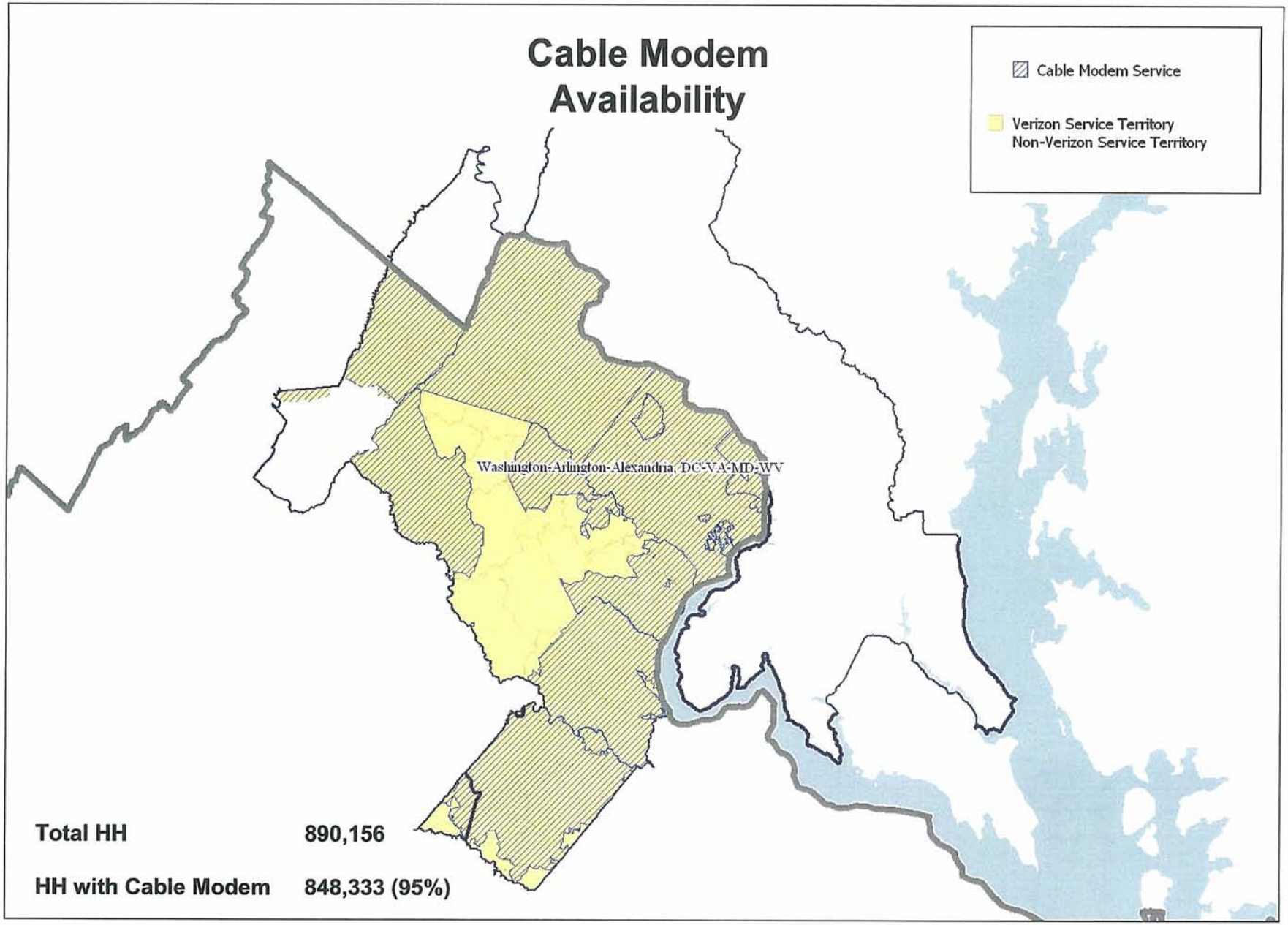


Exhibit WAA-8

Note: HH numbers reflect only those households in Verizon's Service Territory

WAA-9

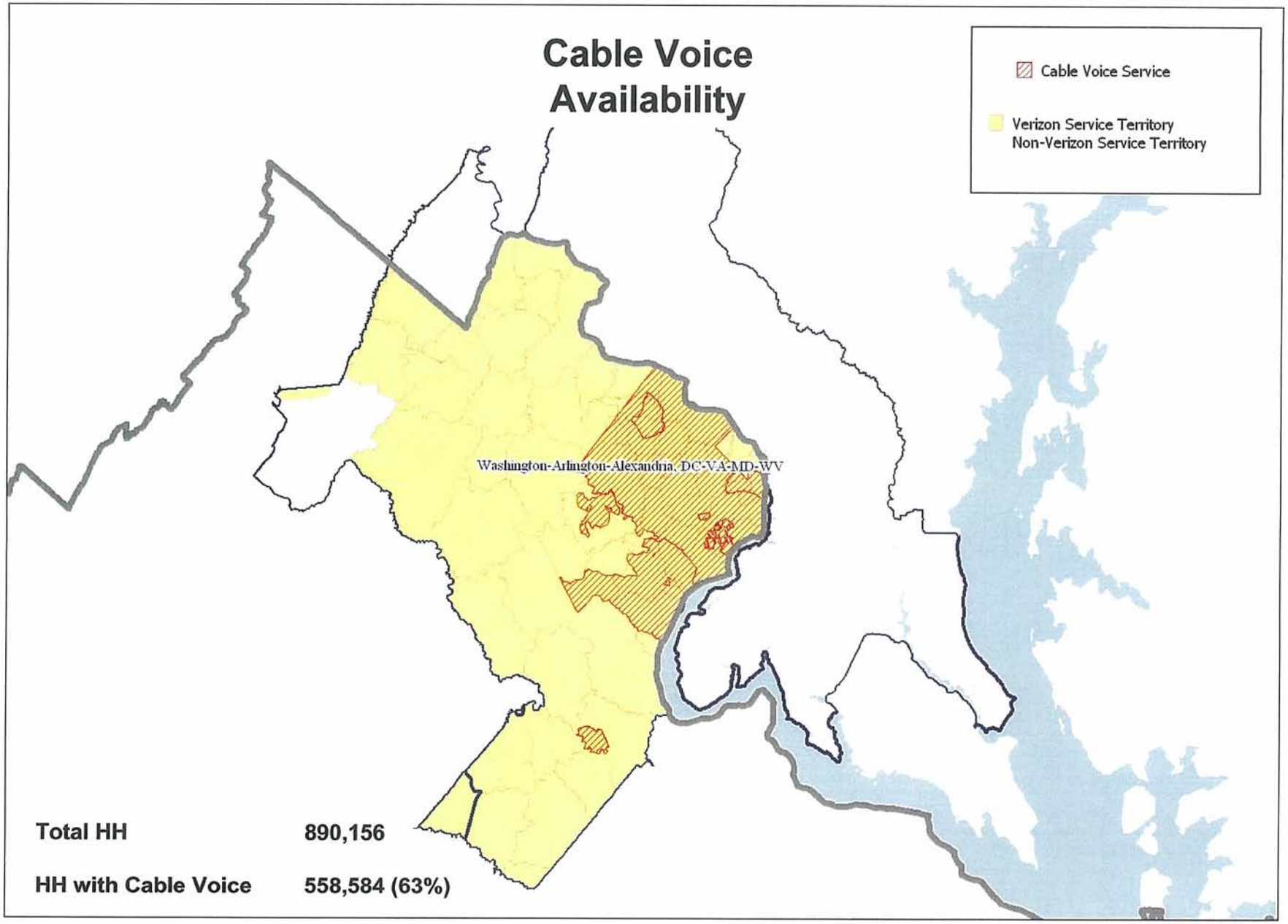


Exhibit WAA-9

Note: HH numbers reflect only those households in Verizon's Service Territory

WAA-10

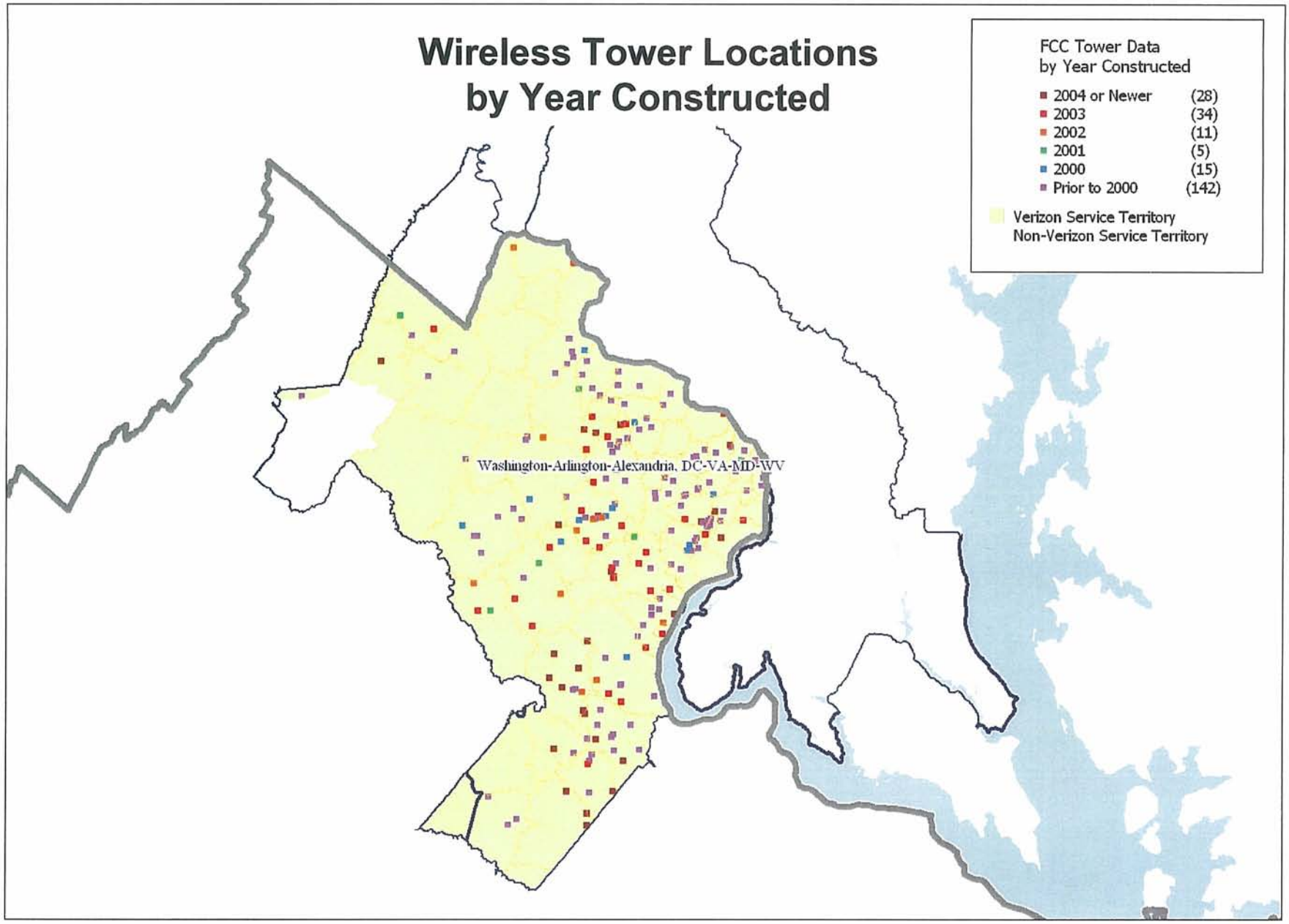
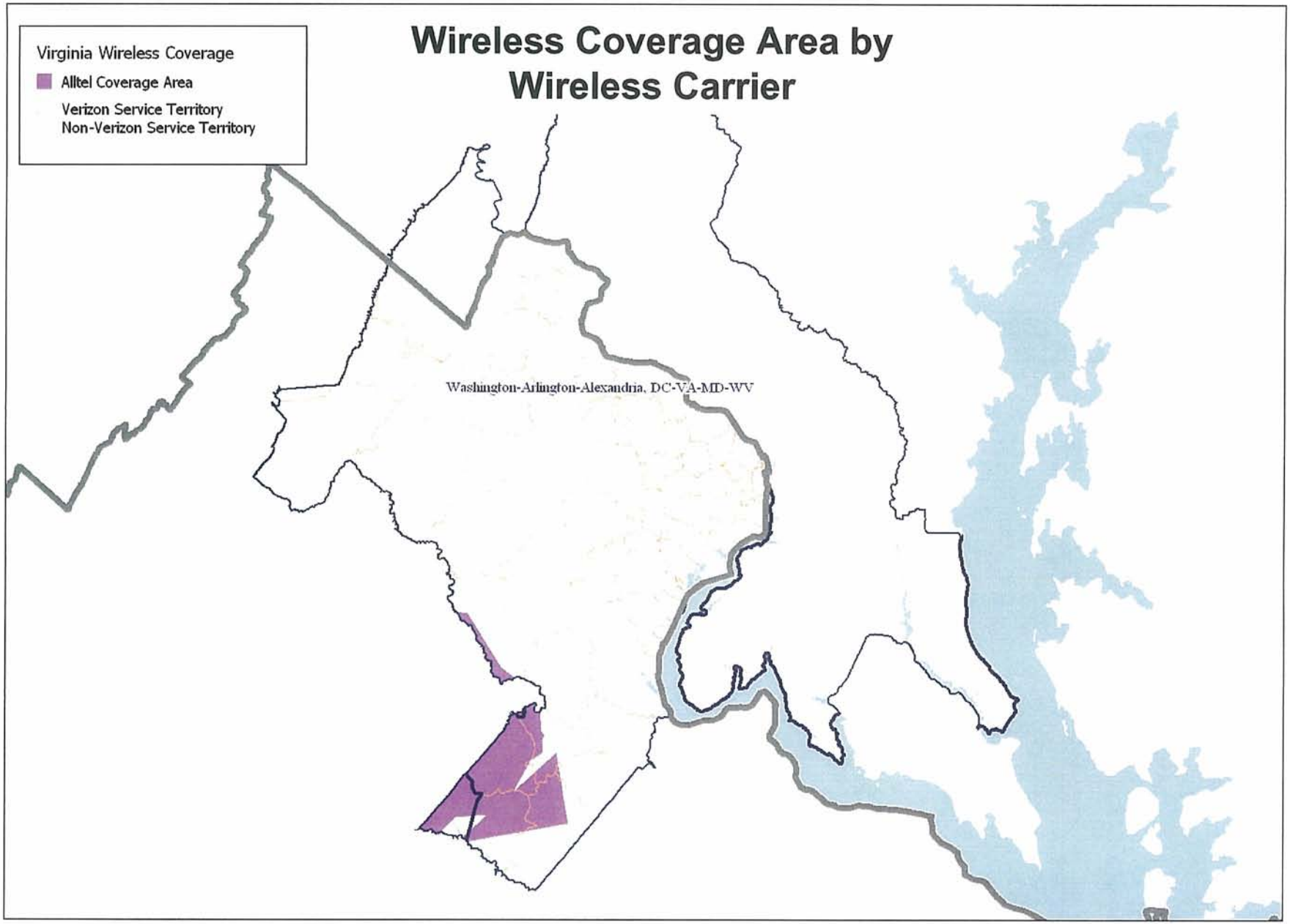


Exhibit WAA-10

WAA-11


Wireless Coverage Area by
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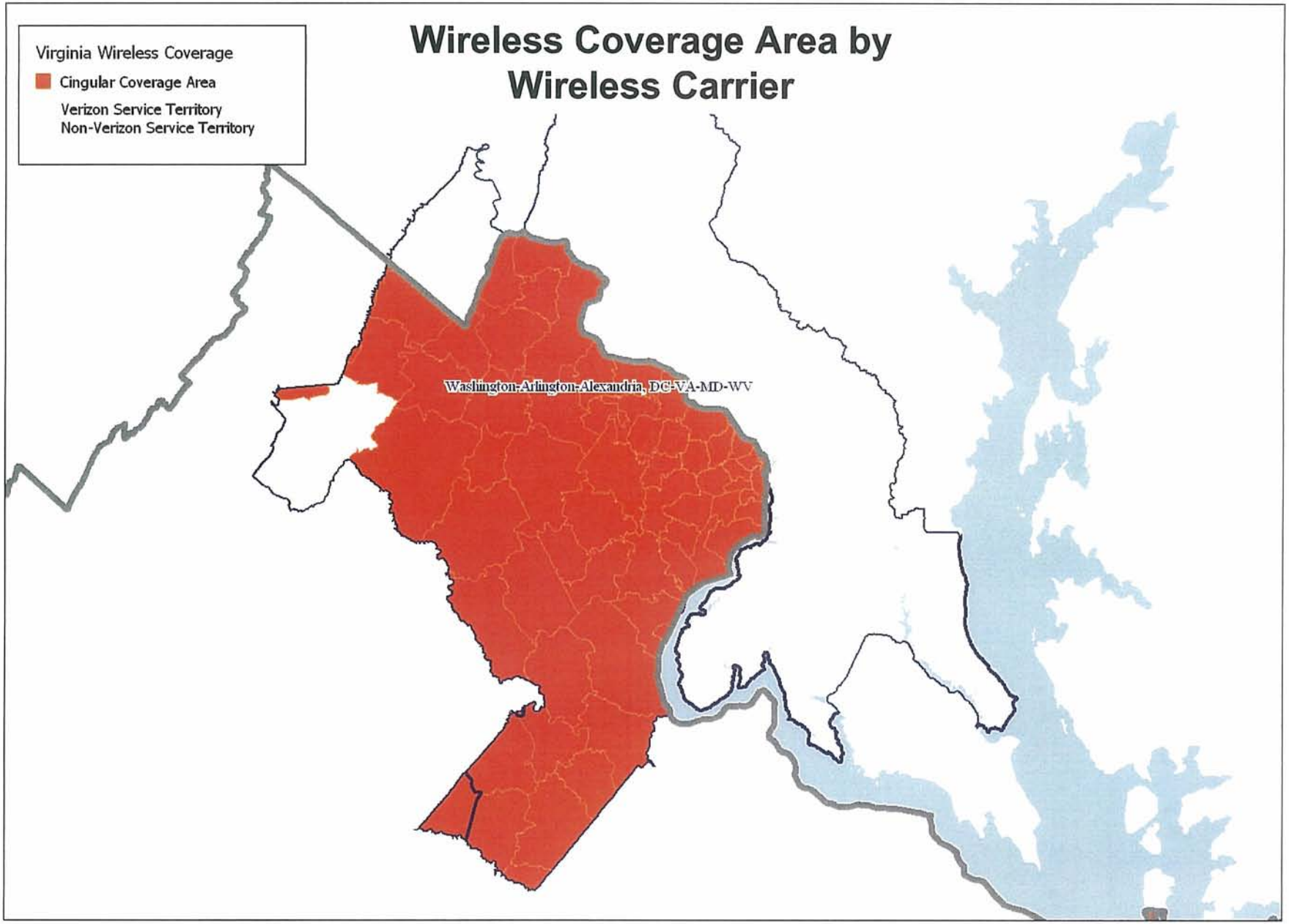
Virginia Wireless Coverage
Alltel Coverage Area
Verizon Service Territory
Non-Verizon Service Territory
Washington-Arlington-Alexandria, DC-VA-MD-WV


Wireless Coverage Area by
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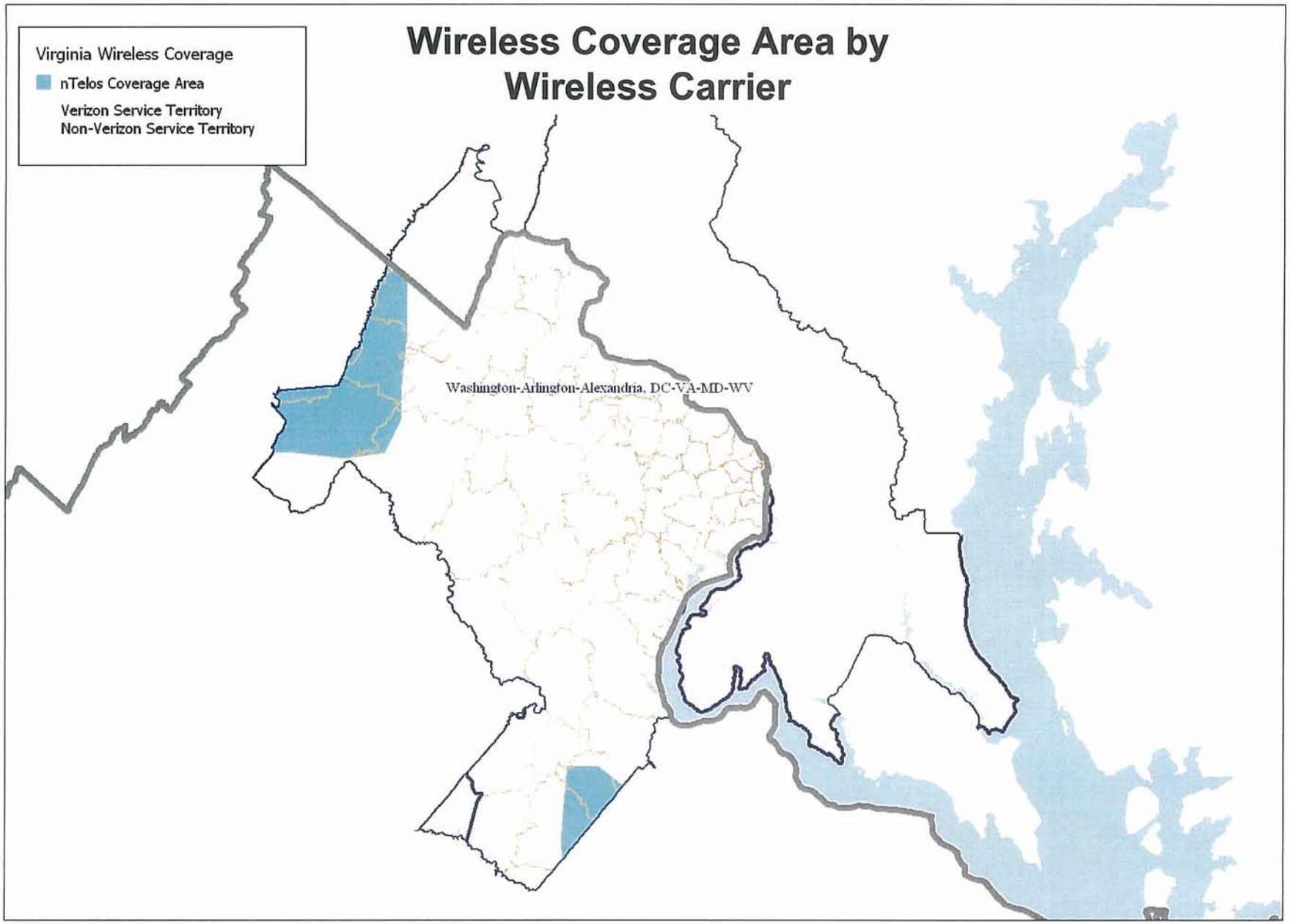
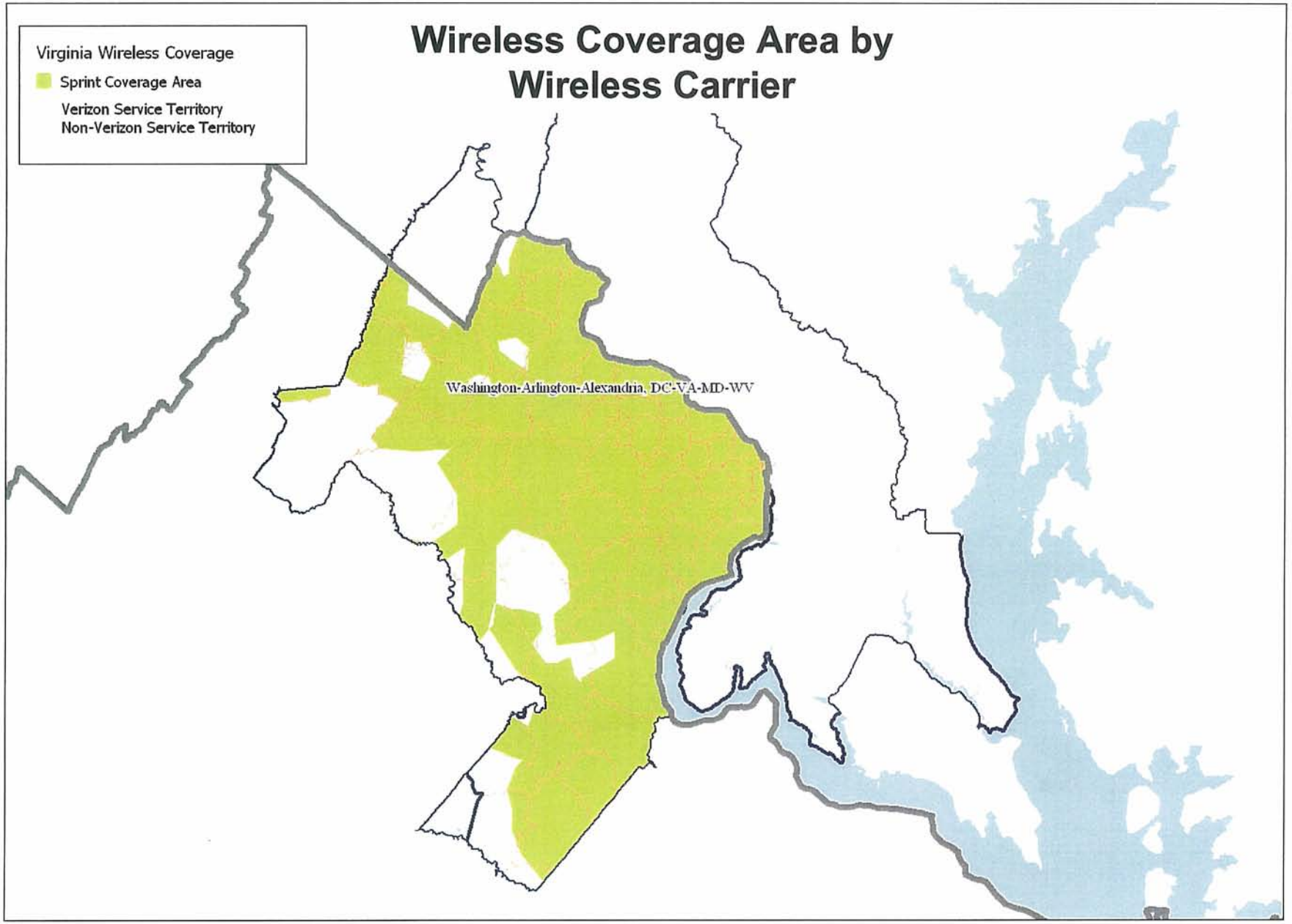
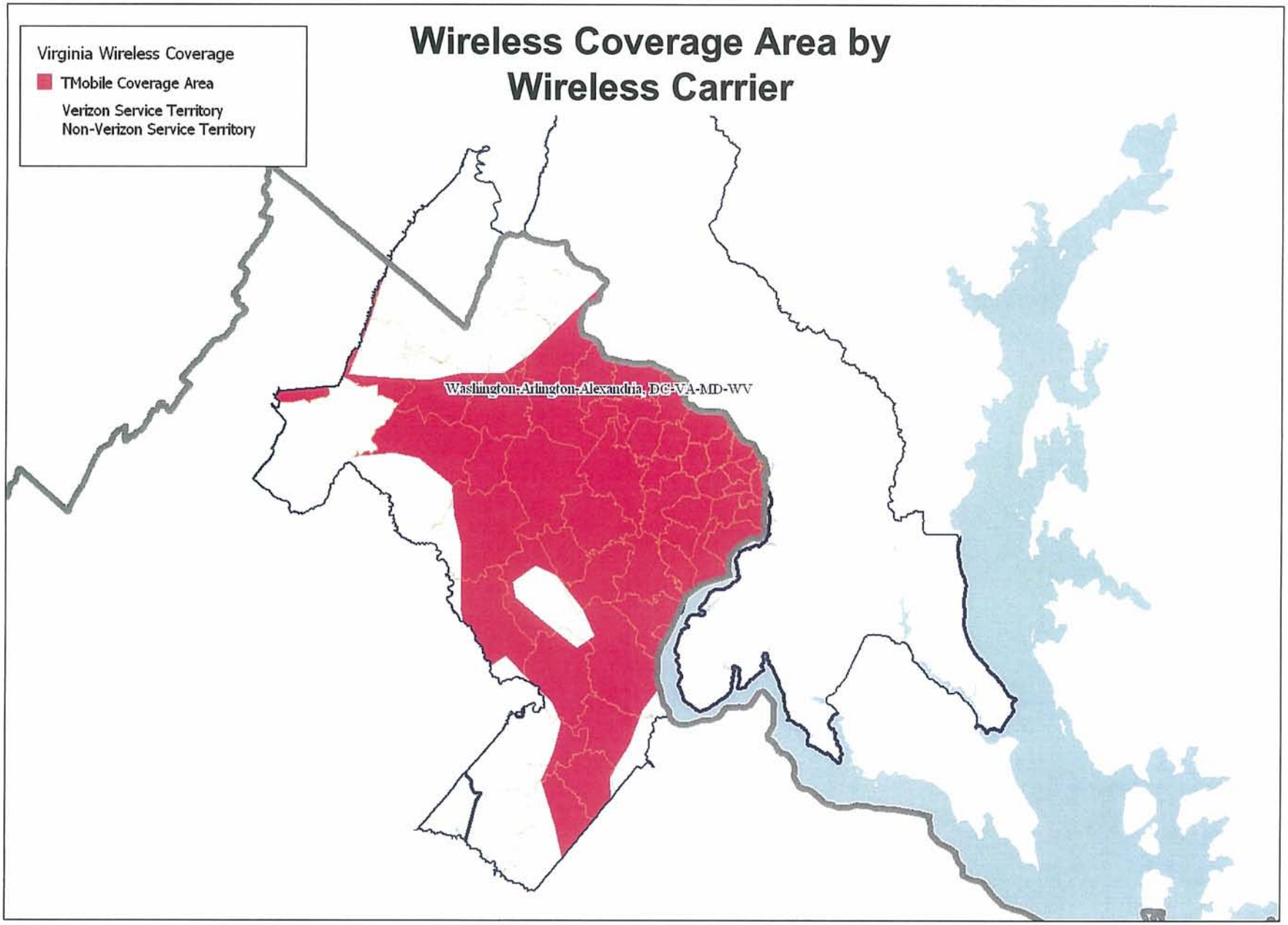
Virginia Wireless Coverage
Cingular Coverage Area
Verizon Service Territory
Non-Verizon Service Territory
Washington-Arlington-Alexandria, DC-VA-MD-WV


Virginia Wireless Coverage
nTelos Coverage Area
Verizon Service Territory
Non-Verizon Service Territory
Wireless Coverage Area by Wireless Carrier
Washington-Arlington-Alexandria, DC-VA-MD-WV


Wireless Coverage Area by
Wireless Carrier
Virginia Wireless Coverage
Sprint Coverage Area
Verizon Service Territory
Non-Verizon Service Territory
Washington-Arlington-Alexandria, DC-VA-MD-WV


Wireless Coverage Area by
Wireless Carrier
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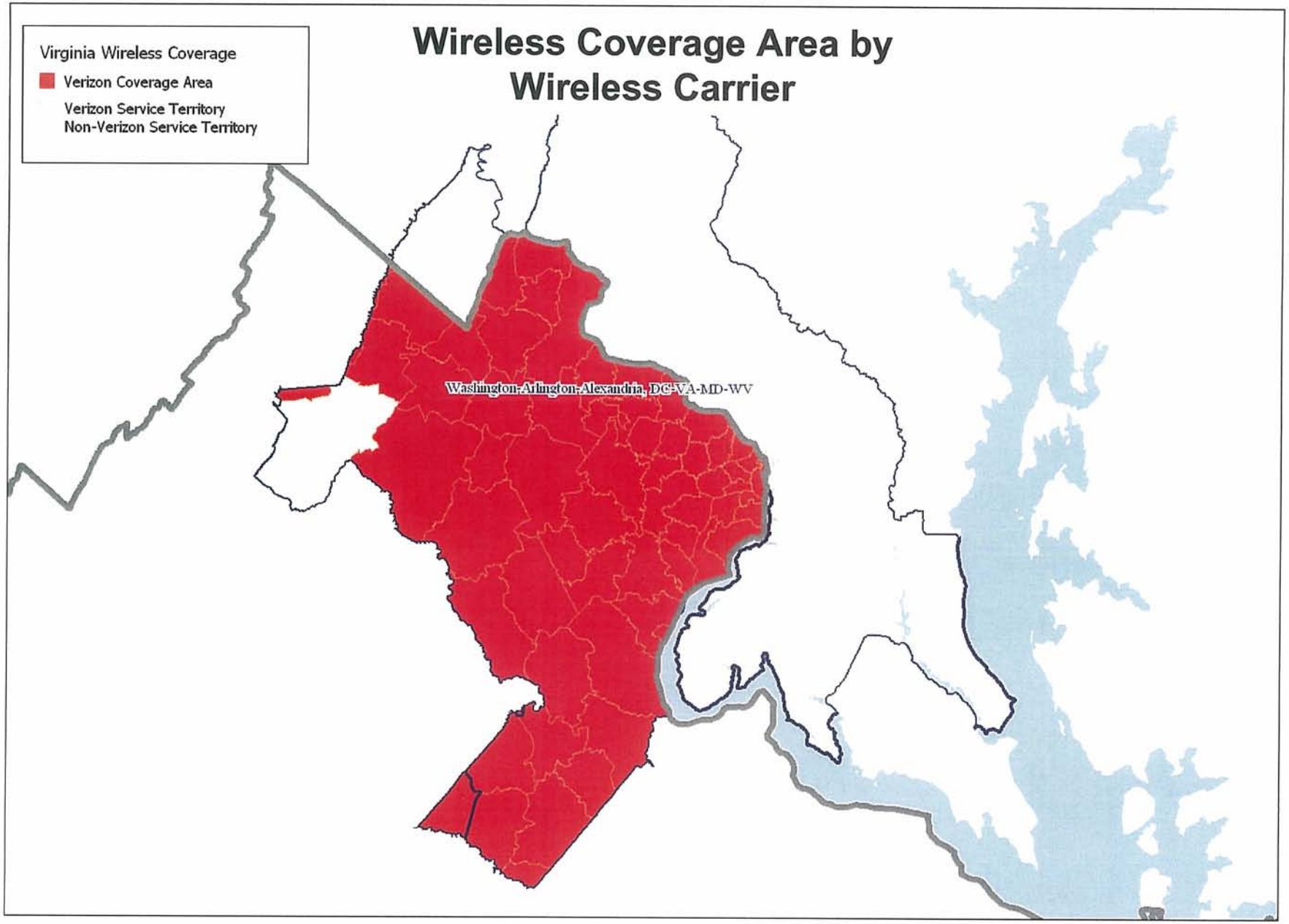
TMobile Coverage Area
Verizon Service Territory
Non-Verizon Service Territory
Washington-Arlington-Alexandria, DC-VA-MD-WV


Virginia Wireless Coverage
Verizon Coverage Area
Verizon Service Territory
Non-Verizon Service Territory
Wireless Coverage Area by
Wireless Carrier
Washington-Arlington-Alexandria, DC-VA-MD-WV

WAA-12

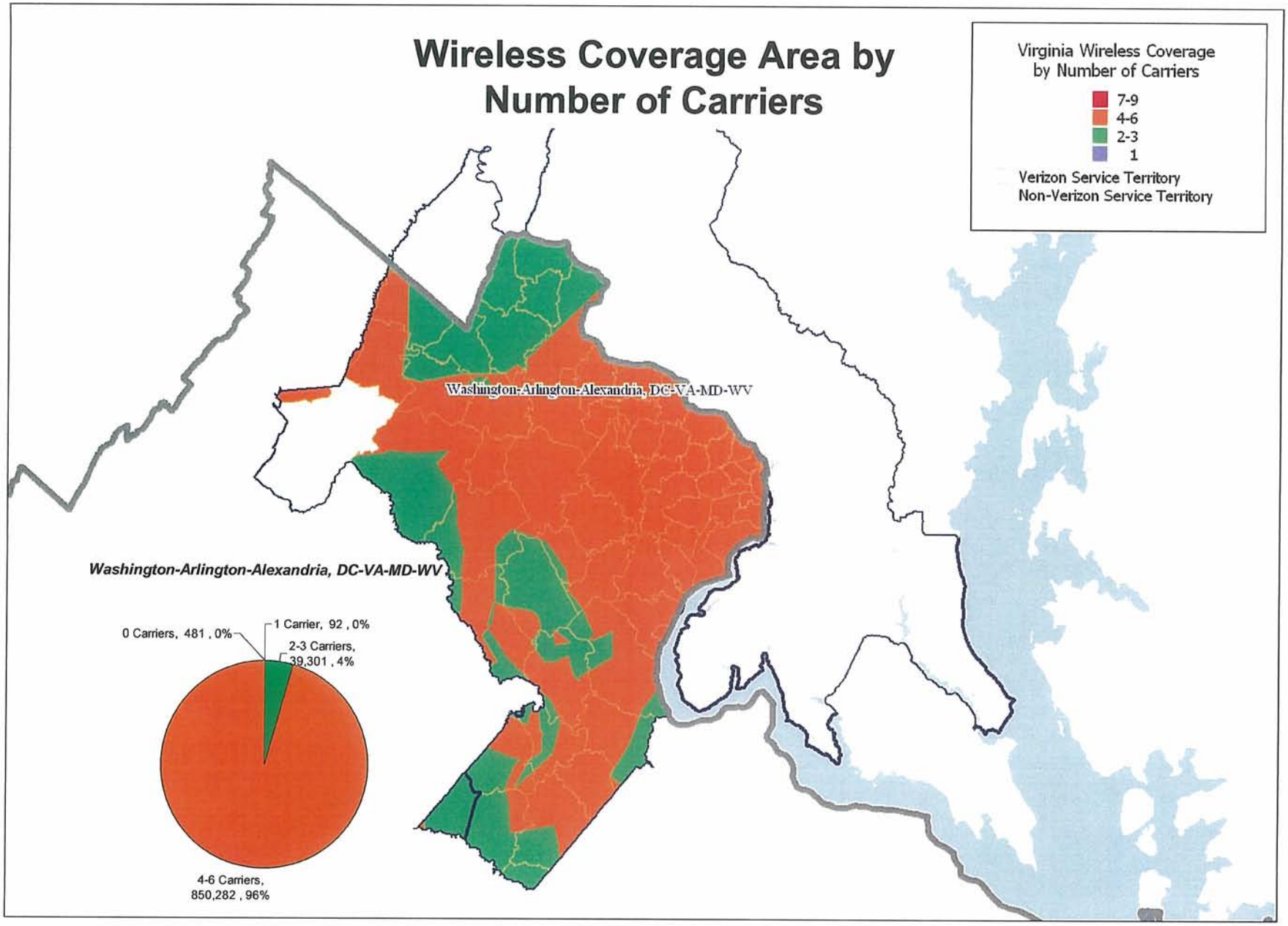


Exhibit WAA-12

Note: HH numbers reflect only those households in Verizon's Service Territory

WAA-13

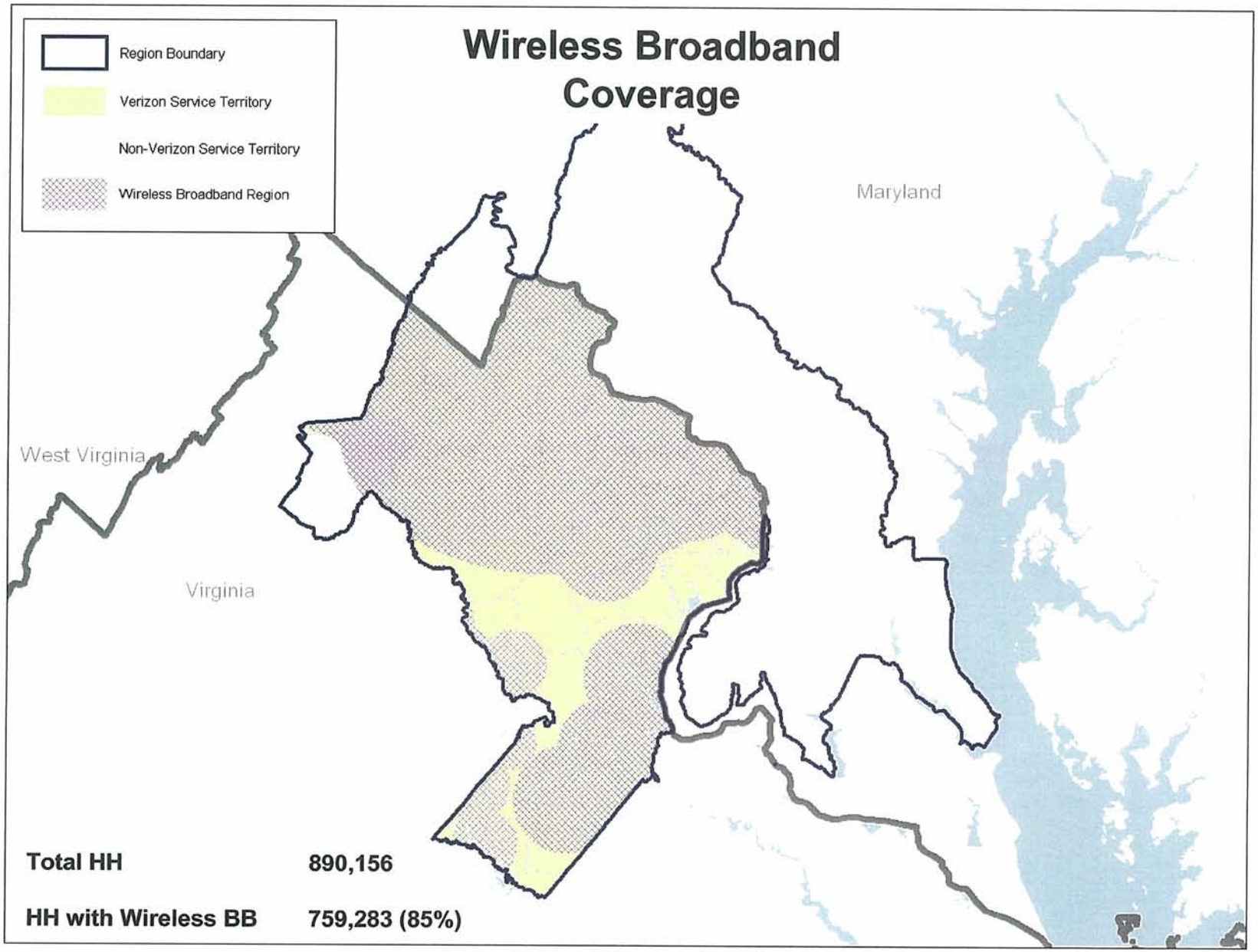


Exhibit WAA-13

Note: HH numbers reflect only those households in Verizon's Service Territory

WAA-14

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EXHIBIT WAA-14

WAA-15

CONFIDENTIAL

EXHIBIT WAA-15

WAA-16

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EXHIBIT WAA-16

WAA-17

CONFIDENTIAL

EXHIBIT WAA-17

WAA-18

CONFIDENTIAL

EXHIBIT WAA18

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EXHIBIT WAA-19